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ABSTRACT

Containing selections of the papers presented at the 1984 and 1985 annual meetings of the North Central Reading Association, this yearbook includes sections on research; reviews of research; professional issues; and program descriptions. Papers include: "Twenty-Five Years of Professional Progress" (James E. Walker); "A Study of Student Alienation from the Formal Goals of College" (Marilyn Christian); "Imagery and Study Skills" (David M. Wark); "Do Good Students Have a Reading Speed Limit? Do Poor Students? Do Nursing Students Read Like Ordinary People?" (Donald J. Goodman); "The Wayne State University Study Skills Inventory: A Criterion-Related Validation Study" (Janine M. Mourguet); "Secondary Reading: What Do the Teachers Think?" (Bruce A. Lloyd and Brian M. Opria); "High School Teachers' Awareness of Reading Skills: A Pilot Study" (Bruce A. Lloyd); "What Does the Research Literature Say about Active Readers?" (Mark E. Thompson); "Dimensions of Speed Reading: A Review of Research Literature" (Mark E. Thompson); "The Validity of the Degrees of Reading Power Test: A Response to Carver's Critique" (Earl F. Rankin); "Characteristics of Effective Intervention Strategies for Enhancing Academic Performance" (Joseph A. Fisher); "Developing Self-Supporting Programs to Offset a Declining Budget" (Rowena Wilhelm); "LD Referrals and Then What?" (Steven A. Katz); "Integrating Computer Assisted Instruction into a University Learning Center Program" (Marie E. Byrnes); "The SQ3R: A Classroom Model" (Kay E. Fisher); "Freshman Year of Studies: University of Notre Dame" (Peter P. Grande); "The Freshman Reading Course at Ball State University" (M. Harshbarger); and "An Overview of Ball State University's Reading Programs" (Dorothy Shipman). (RS)

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1986 Yearbook

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PREFACE

The 13th Yearbook of the North Central Reading Association contains a selection of papers presented at the 27th Annual Conference held at Notre Dame University, South Bend, Indiana October 21-23, 1984, and the 28th Annual Conference held at Washtenaw Community College, Ann Arbor, Michigan, October 18-19, 1985.

The Association is especially indebted to Dick Willemin and Ann Porowski for serving as the program committee for the South Bend meeting, and to Rose Marie Nagel and Rowena Wilhelm, who served as program committee for the Ann Arbor meeting. Both were challenging and stimulating events, thoroughly enjoyed by all who attended.

Our annual conferences still retain their traditional character of cordiality, informality, comraderie, and enthusiastic professional give and take.

The effectiveness of the annual conference obviously derives from the nature and content of the papers presented. A very special thanks is extended to all whose presentations made these meetings so worthwhile. The excellent participation of all in attendance is due in great measure to the provocative content of the various papers presented. It is a pleasure to be able to extend the audience for these presentations as far as possible through inclusion in this yearbook.

Finally, the Editor wishes to thank Mrs. Margaret Landis for her dedicated preparation of this manuscript, and to the Office of Student Development Services of Drake University for granting her and the Editor the time and facilities required to complete the project.

Joseph A. Fisher

Thirteenth NCRA Yearbook

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TWENTY-FIVE YEARS OF PROFESSIONAL PROGRESS

A TRIBUTE TO THE NORTH CENTRAL READING ASSOCIATION

James E. Walker

Invitational Address
25th Annual Conference
Flint, Michigan
October 22, 1982

In the year 2007 meeting in conference on the occasion of the 50th anniversary of the North Central Reading Association in the city of Flint, Michigan, I hope to join you with my immaculately bald head, fresh from the land of baseball and books and balmy breezes.

That kind of dream has to be couched in the conditions of the times. In 1958, the founding faithful of the fledgling North Central Reading Association could never have seen some of the developments which we now have documented for our immediate reference. My purpose here was better stated in the proposal submitted to the Program Committee when the objectives of the presentation were listed as twofold: 1) to trace the origins of significant contributions to reading practices and thought as contained in the NCRA yearbooks and, 2) to recognize NCRA professionals who have contributed over the past twenty-five years to the progress of reading education. Given the nature of this occasion, I should like to start with the latter objective.

Through your chronicles, the yearbooks, we can decipher a great deal of information about the professionals who form this organization. In these ten volumes are one hundred thirty papers contributed by one hundred and eleven members in a total of 1,782 pages. But reading all those pages is not as formidable a task as you might think if you will do as I did: read David Wark's article on heart beat and reading rate, followed by Donald E. P. Smith's paper on the origins of SQ3R and you will be applying solid study strategies to your task. What I did conclude overall from my readings was that the NCRA is a group of purposeful professional people going places and saying some worthwhile things (emphasis added). That sentence actually suggests the outline for what is to follow in these remarks.

NCRA Purpose

The first yearbook editor, Alton Raygor, wrote in the preface to Volume I that thirty-three persons from the Middle West met at the General Motors Institute in Flint, Michigan for a two-day conference. Raygor continued:

> They assembled at the invitation of Harry O. Patterson, who has long been interested in the person-to-person and group exchange of ideas about developmental reading, particularly at the college and adult level. (p.iii)

The editor went on to say that one of the NCRA is "to give encouragement to research and experimentation in the field of reading."

NCRA Professionals

A commercial speed reading program which I have used for about twelve years contains a short article entitled "How to Ruin an Association." The article begins:

> Once upon a time, the Midtown Chapter was one of the most active Chapters in the Association. It was a smooth-running, efficient organization that enjoyed great prestige in the community.

> Then one day, things began to change. One of the members said to himself, "No one will miss me. I have so many other things to do, I think I'll drop out of the Chapter's activities."
>
> So hx began to avoid Chapter functions. Hx rxfusxd to accxpt his rxponsibilitixs, and thx Chaptxr had to limp along without him, but it mxant that anx of thx rxmaining mxmbers had to doublx up and do twicx as much work as bxforx.
> — Sack-Youman Developmental Speed Reading Course. New York: College Skills Center, 1981. p. 23.

The selection at this point is contrived to systematically change letters as a demonstration that a reader does not necessarily have to see every word to get the gist of what is being read. My point here is to share with you the main idea of the passage which is: Every member is important to an on-going organization. The same holds true of this organization. And who are some of these members?

As you move through the pages of the yearbooks, you quickly meet the three editors, Al Raygor, David Wark, and Joseph Fisher. They edited two, five, and three volumes respectively. I should let you in on some other matters which I'm sure you are not aware of in their work. New editors start off as do most assistant professors today - with a big bang! For example, Raygor's first preface was a page long, but the next volume dwindled to 3/4 of a page. Wark started with a total of 66 lines, but he weakened appreciably in the next volume with only 19 lines. In Volume VI however, Wark's energies revived and he wrote 36 lines in that preface, and 34 lines in his final volume. Bring on Joe Fisher! Joe wrote three pages in his first volume, but, following the example of his predecessors, fell off to 57 and 58 lines in his next two volumes. All of this simply proves a point: Old editors never die; their ink wells just dry up!

Seriously, the lonely job of editing conference proceedings and yearbooks is, at least, a tedious task, usually overlooked by most of us. This occasion is an appropriate time to acknowledge the splendid efforts of Al, Dave, and Joe.

Program Planners

Another group of unheralded colleagues are those who planned all those programs in the last twenty-five years. Boyd Jackson put together three programs while Donald E. P. Smith, Dave Wark and Richard Willemin put together two programs each. George Watson, John Hurst, Roger Pepper, Phil Clark, Pat Patterson, and Richard Kroenke formulated programs. Nancy Davis, Fr. David Turner, Fred Davidson, and Merrill May fashioned programs over the years. The Who's Who continues to include colleagues like Joe Fisher, Rowena Wilhelm, Rosemary Nagle, Al Raygor, Bruce Lloyd, Jim Powell, and Clarence Anderson. Again, this is an opportune moment to show our appreciation for all that behind-the-scene work in putting together twenty-five conferences.

Special People

The yearbooks also contain respectful remarks to a few colleagues who were singled out for their special contributions to the organization: the kind of people we will miss very much some day. The memory of Roger Pepper was recalled with a tribute of including three papers in his honor in Volume VII. Nancy Davis, Merrill May, Fred Davidson, and Boyd Jackson were recognized on the occasion of their retirements. The first two volumes also acknowledge the leadership of Pat Patterson in forming the organization in the first place. There filters through these pages a very humane tone for many of our colleagues in NCRA.

On the occasion of the 25th anniversary, we can also take a few moments to reminisce about some others who have been part of these conferences. As a way of making a point, how many of us at this moment have been in their present institution for ten years? Do you remember the days when we could move about almost at will? Remember when Earl Rankin was at Texas Christian University and then moved to the University of Kentucky? When Clarence Anderson was at Bemidji State, and later at Flint Community College? Ed Summers was at Indiana University and at Minnesota and now at the University of British Columbia. George Watson used to work at the John Marshall Law School and Les Van Gilder was at Marquette. Garr Cranny went from Minnesota to Florida State and Len Braam moved from Syracuse to Skidmore. E. Costen Frederick was at the Ferris Institute but is now in Idaho. Phil Clark went to Ohio State by way of Michigan while Frank Greene is at McGill by way of Syracuse where he was one of my professors.

Several years ago Robert Karlin was at Southern Illinois University as was Allen Berger who eventually went to Pittsburgh with a stop at the University of Alberta. Martha Maxwell, now retired, has moved back to Maryland with a distinguished period of time at Berkeley.

Paul Kazmierski was at Lorain Community College; now he is at Rochester Institute of Technology. Arthur McDonald was at Marquette: Bob Palmatier was at Georgia, and George B. Schick was at Purdue. Mark Thompson moved from Kentucky to Washington, D.C.

There is one individual who has distinguished himself by his stability. I somehow get the impression that Dave Wark was born and raised at the University of Minnesota and has lived there ever since!

Places

Along with the many professional friends you can meet in the NCRA, let us also recall some of the locations for these meetings. You have chosen some sites because of the cities involved while in other instances you have selected particular campuses. With this conference, Flint leads the cities with four meetings while Minneapolis hosted two meetings. You also met in Cleveland, Chicago, Detroit, Bloomington, and even Wheaton, Illinois. The favorite campuses are Purdue and Notre Dame with three conferences. There were also meetings at the University of Michigan, Michigan State, Ohio University, Valparaiso, Kent State, Drake, the University of Illinois, and Western Michigan University in Kalamazoo.

I said earlier that the NCRA is a group of purposeful professional people going places and saying some worthwhile things. I have already spoken of the people and places. And now for some of the contributions to reading education which these professionals have made in these different places, as these contributions are reflected in the yearbook pages.

Reading Contributions

The content of the ten yearbook volumes is extensive. Joe Fisher categorized the papers under twenty-two topics. The titles which have been dealt with most include materials and techniques (24), college and university reading programs (21), professional problems (21), therapy and training (20), methodology (19), variables, e.g. attitudinal (17), and comprehension (15). It would be virtually impossible to analyze each by topic so I will simply append a list of contributions which are included by virtue of their content at the time of presentation, their different orientation and insight into reading-related concerns, or their historical interest to our members and to the field of reading in general. (See list of noted references at the end.) Admittedly, the entries highlighted on this list are one person's opinion.

Conclusion

Several years ago I wrote an article for a state reading journal. The title was "Speed Reading: Our Best-Kept Secret." I thought of that title in preparation for this presentation to celebrate the NCRA's 25th Anniversary. As a professional organization, the NCRA is another example of a "best kept secret" because the organization tends to remain true to its initial purpose. The NCRA does not stand on pretenses. The Seventh Yearbook, page iv, says that "The North Central Reading Association, as many people have come to realize, is the most relaxed group in adult reading." You do not get hung up in ceremony or on counting the number of yearbooks, ten, in a twenty-five year period. Rather, you get hung up on what counts, and on who counts!

Your meetings are as informal as your yearbooks are informative. To the members, to the officers on the Board of Directors, to the Editors, I express my personal congratulations on reaching this milestone in the history of reading education in this organization. Especially do I want to congratulate Pat Patterson, a man of your time at that time and still are at this time. For this reason, I can say that in the year 2007, meeting in conference on the occasion of the 50th anniversary of the North Central Reading Association in the city of Flint, Michigan, I hope to join you with my immaculately bald head, fresh from the land of baseball and books and balmy breezes. Happy Anniversary, North Central Reading Association!

References**

Author	Title	NCRA Yearbook	Pages
Fisher, Joseph A.	Yesterdays' Students, Tomorrow's Challenge	IX	150-176
________.	A Topical Bibliography of Study Skills References	X	166-217
Johnson, Sue	The Four T's: A Combination of Group and Individual Approaches to Teaching a "How to Study" Course	VI	38-61
Palmatier, Robert A.	The Last Two R's: A Research Review	VI	120-130
Robinson, Francis P.	Survey Q3R: Then and Now	VI	248-261
Schick, George B.	Metaphors of Teaching Reading	VII	156-164
Smith, Donald E.P.	The College Reading Specialist as Instructional Technologist	VIII	211-224
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________.	Visual Motility	III-IV	174-187
Thompson, Mark E.	An Investigation of the Entwhistle Study Skills Inventory and Its Contribution to the Prediction of Academic Achievement With a Community College Population	VIII	95-136
________.	A Review of Significant Studies With High-Risk Students: Remediation for College Students	IX	133-149

** Selected papers illustrating NCRA contributions to reading education.

Wark, David M.	Survey Q3R: System or Superstition?	III-IV	161-170
________.	Test Panic, Daydreaming and Procrastination	VI	131-151
Weidner, Hal R.	Structure of a Program for College Composition	III-IV	141-151

A STUDY OF STUDENT ALIENATION FROM THE FORMAL GOALS OF COLLEGE

Marilyn Christian
College of St. Thomas

ABSTRACT

Support systems, bonding, and nurturing indicate important features of good relationships. What influences might these have on college students? The purpose of this study was to examine what factors alienate or deter students from the academic goals of college.

Four areas of this topic, all of which inter-relate, were examined in this research. They included:

(1) the importance of having academic goals or plans, both short-term and long-term;
(2) the necessity that education be relevant, as well as "pay off" emotionally;
(3) the relationship between faculty and student academic expectations, particularly relating to testing and grade evaluations; and
(4) the effects of alienation, or negative inter-relationships, on the student population.

Research done to elaborate on the problem consisted of a 25 point questionnaire regarding student attitudes and study goals. This survey was distributed to 52 College of St. Thomas students who responded to the attitude questions and also commented spontaneously in a short paragraph.

The survey instrument examined six areas regarding academic alienation. These included: (1) grades, (2) goals, (3) feelings of belonging, (4) relevancy of courses, (5) study skills; (6) role of the teacher.

As a result of attitudes expressed and the effects of peer support, it seems evident that consideration be given to further the opportunities for academic peer assessment. Cooperation and support indeed raise self-esteem. If the learning and teaching conditions at the college or university are positive or satisfying, expectations for future success can be projected in a similar vein.

College students frequently suffer alienation from the formal goals of college. According to Seeman, alienation is defined in five broad categories:

> Powerlessness, meaninglessness, normallessness, isolation and self-estrangement. People that are socially isolated tend to

> assign low reward value for goals that are typically held at high esteem by the members of a given society.[1]

The purpose of the present research will be to examine four areas of this topic which all inter-relate. They are: (1) the importance of having academic goals or plans, (2) the necessity that education be relevant, (3) the relationship between faculty and student academic expectations, (4) and the effects of alienation on the student population.

The purposes for conducting this study are:

1. To determine to what extent college students at large suffer alienation from the formal goals of college.
2. To determine to what extent College of St. Thomas students suffer alienation from the formal goals of college.

Related purposes of this study are:

1. To examine the importance of having academic goals.
2. To examine the necessity that education be relevant to students' needs.
3. To determine the relationship between faculty and student academic expectations.
4. To generalize on the effects of alienation on the student population.

The effects of student alienation deter success in the academic goals of college. Peer pressure, the being a foreign or minority student, low socio-economic status, all play a part in student alienation. An examination of these factors permit some conclusions regarding student cultures or groups which, with their resultant attitudes and goals, comprise the academic population of college.

Research done to elaborate on the problem consists of a 25 item survey regarding student attitudes and study goals. The survey was distributed to 52 College of St. Thomas students who responded to the items and also commented in a short paragraph. An analysis of the various "cultures" within the school society provides a picture of the positive and negative variables affecting academic life within the College of St. Thomas.

SCOPE

This study was conducted on a random selection of freshmen, sophomores, juniors and seniors at College of St. Thomas. The questionnaire was distributed during Reading and Study Skills Seminars during March, 1984. The responses of students will be analyzed according to the purposes and related purposes already enumerated.

Classification and Definition of Terms

In discussing the present research, the following terms are used as defined.

Alienation. Alienation revolves around the complex negative inter-relationships between man and his environment.[2] High levels of social alienation may seriously interfere with the academic and occupation goals of students.[3]

Goals. Three purposes need to be kept in mind for successful college achievement. They are: long range or approximately five years from now, medium range for the semester or quarter, and short range for this week and today.[4]

Culture. Webster defines culture as the beliefs, social forms, and material traits of a social group within a college.[5]

Anxiety. Webster defines anxiety as apprehension, uneasiness over anticipated problems.[6] It has also been defined as "The state of an individual in a threatening situation from which he cannot immediately escape."[7]

Peer Pressure. Webster defines peer pressure as belonging to the same group in society, especially when membership is determined by age, grade or status.[8]

Loneliness. Loneliness has been defined as "A distressing affective and motivational state resulting from the failure to satisfy one's needs for social and emotional interchange with others (Weiss, 1973)."[9] Another definition states that it is a "Subjective experience in which the individual's relationships are fewer or less satisfying than desired (Peplau and Perlman, 1979)."[10]

Minority. This is a part of a population differing from others in specific characteristics and often subjected to differential treatment.[11]

Review of the Literature

College students frequently suffer alienation from the formal goals of college. In examining guidelines for students, the need for specific academic goals is often stressed. The key to goal achievement is to develop a rough schedule of study times and the tasks to be achieved within each.[12] Students who have trouble concentrating while studying should examine their tasks in order to set priorities.[13] Wankowski has found that the more successful students are those who have a somewhat clearer picture of their future professional career than the rest.[14] Flowers (1975) suggested that students with unclear or unrealistic social, vocational, and educational goals fail more often than those with clear and realistic goals. McClalland implied that minority students, whom he believes have not yet learned high achievement needs, are not motivated enough to explore and select clear and realistic goals.[15]

The second important guideline is that education be relevant to the student. According to

Phillips:

> Much of student unrest appears to center on the need for "relevant" education, i.e., educational content and practice which have real importance and merit to the student's own life style.[16]

It is important that within the academic institution, a variety of instructional settings be offered so that students can choose the structure which best fits their learning needs.[17] Because American society has changed, educational goals have likewise changed. More individuals remain students longer before going out into the work force due to greater family affluence. Larger numbers enrolling in college, technological changes, and the theory of "lifelong" learning necessitates diversity in the academic world.[18] So, the student challenge is to avoid spending time on anything unrelated to his future tasks.[19]

Along with educational relevance is the need for emotional satisfaction for work done in college. As learning becomes more difficult and the standards more demanding, the emotional "pay off" from the teaching situation become less satisfying. In high school, the student - teacher ratio is smaller and close contact with teachers is common, but in college he may find the ratio to be far greater and less intimate, and the student is expected to act as a more independent learner.[20] Many are not prepared for this and feel lonely in spite of supposedly being trained to handle independent studies.[21] According to Raaheim, in college "It takes a long time before the students' 'thermostat of emotional warmth' registers values of acceptance and recognition equivalent to his past educational experience."[22]

The third important guideline in examining student alienation from the formal goals of college is the relationship between faculty and the student academic expectations.

> Research has concluded that anxiety interferes with the

> academic achievement of college students. Sassenrath and Kight, 1965, suggest that trying to motivate students by emphasizing the importance of a test, if anything, increases test anxiety. This is particularly true when students come to a testing situation not sure of how to prepare.[23]

As McKeachie says (1969:146):

> Because grades represent to many students a fearsome, mysterious dragon, anxiety can sometimes be reduced by encouraging the students to participate in planning the methods by which grades will be assigned...the dragon seems less threatening if the students have helped determine the system by which they are devoured (or rewarded).[24]

According to Rosenfeld, it is important for students to know how they will be evaluated. Uncertainty about teacher expectations can lead to anxiety, concern with unimportant details, inability to see the organization or material, and other impediments to subject matter learning. Instructors should make their instructions, requirements, criteria for grades, etc. as clear as possible, and encourage students to ask questions when they do not understand.[25] The conditions under which examinations are given often cause apprehension:

> Conditions under which the examination is given-such as the vehavior of the instructor (e.g. warm and understanding versus cold and authoritarian), place of examination (e.g. regular classroom versus an unfamiliar auditorium, and time of examination (e.g. regular class period versus evening or Saturday) - may decrease or increase stress associated with an

examination.[26]

In one study on academic disaffection, more than 50% of the students felt that the university administration was basically unaware of student needs and demands.[27] Long noted that student and faculty negativism is likely to be found across demographic (human populations) categories in large university settings. Student negativism is less visible in more academically able upperclassmen.[28] Conversely, students with lower GPS's were more negative toward the University. It was also found that students in large classes felt that their opinions would be less accepted by faculty than did students in smaller classes.[29]

When GPA is used to provide pressure with respect to probation or dismissal notices, graduation or transfer requirements, scholarship applications, student government, clubs, political activities, and so forth, disaffection by students with school and faculty is almost inevitable.[30]

In summary, Raaheim makes these assumptions about human learning, be it spontaneous or formal:

> (1) Readiness to learn is derived from past learning experiences and projected into the expectations about learning in the future.
>
> (2) Continuity of success is more likely to be maintained if the learning and teaching conditions at the university are as satisfying to the individual as were his educational experiences in the past.[31]

The fourth important guideline is the effects of student alienation on the student population. Alienation refers to the negative inter-relationships between man and his environment. According to Newhouse:

> The more alienated a student is from school-related activities, the more likely is the possi-

> bility for academic dishonesty... Students perceiving themselves outside the school social structure often resort to deviant behavior as a survival technique.[32]

Interestingly, students who rated high on the alienation scale also exhibited a high disposition to participate in cheating behavior.[33]

Peer pressure forms a definite cultural effect on college students. According to Johnson:

> Many students are between the ages of 17 and 23, a time when it is particularly painful to feel that people of your own age do not think well of you. You may know how you want to spend your time and what you want to believe, but the people around you may be sending another message: "Enough studying, let's have a party" or "The demonstration is more important than math problems" or "How can you miss this great concert to write your paper?"[34]

Generally, students fear negative reactions from their teacher or peers. Most students are probably too concerned about what others will think if we don't agree with them, or don't do what they'd like us to do.[35] The conclusion is that if you are in a group in which you have to make compromises that aren't good for you, there is probably nothing else to do but find other relationships.[36]

Studies on loneliness indicate that a lack of significant relationships will also lead to alienation.[37] Jones, (1982;) Howowitz, et al, (1982) suggest that one of the primary causes of loneliness among young adults is inadequate social skill.[38] The tendencies of loneliness include introversion, social anxiety, sensitivity to rejection, public self-consciousness, and diminished social risk-taking.[39]

The lonely person has also devalued the desirability of interactions with people and does not believe that he/she is in control of life's situations.[40] Research has indicated that the lonely person lacks empathic abilities, social experiences, and general communication skills.[41] Dissatisfaction rather than frequency or quantity of social contacts may be most closely associated with loneliness.[42]

> It is related to anxiety, depression, interpersonal hostility, and poor self-esteem.

Alienation among college students is particularly noticeable among minority race and foreign born students. Suen found that the level of social alienation among foreign students was high. It was positively correlated with powerlessness, meaninglessness, and normallessness.[44]

Peterson and Rodriguez (1978) observed that minority students perceived University and community activities in a predominantly white campus as directed toward white students. This led to feelings of anger, frustration, and helplessness among minority students.[45]

Remsik (1979) pointed out that black students entering college experienced a sever culture shock.[46] Astin (1977) reported black students dropped out from predominantly white colleges at a rate of 49.5%, as compared to a dropout rate of 41.4% among white men and 30.9% among white women.[47] The resulting study proposed two distinct directions for minority program designs. First, a program aiming at the reduction of alienation among black students should focus on services such as peer counseling and group activities. Second, a program aiming at the reduction of black student attrition may be effective through tutorial assistance and through services such as intensive orientation and career guidance.[48]

Researchers have also found that students coming from low socio economic backgrounds encounter feelings of frustration, fear, anxiety, and stress upon entering college.[49] These negative attitudes about themselves frequently cause negative attitudes about educational achievement.[50]

Peer support or pressure can have an important effect on student alienation. Silver and Wortman (1980) suggest that:

> Social support may be helpful in stressful situations to the extent that an individual becomes part of a system of mutual obligation and reciprocal validation. Feelings of being cared about and the validation of one's feelings, beliefs, and interpretations may lead to greater self-confidence and self-esteem.[51]

Other researchers, (Brown, 1979; Lowenthal, and Haven, 1968; Paykel, 1979) have also found significant effects for the role of social support. They conclude that the maintenance of a stable, high quality relationship is closely associated with good emotional adjustment.[52] Medical students, as a cultural group, depend on one another for their emotional well-being. The demands of their academic schedules require a healthy support system.[53]

Researchers have found qualities which suggest success in academic work. These may be associated with:

(a) personal confidence
(b) realistic projection into future occupational and social roles
(c) emotional stability
(d) temperament tendency toward introversion
(e) independence from teachers
(f) acceptance of curricular and work demands.[54]

Conversely, academic failure is associated with:

(a) lack of personal confidence
(b) fearful and unrealistic projection into

the future
(c) tendency to over-act in social and learning situations by withdrawal or too eager desire for participation
(d) temperament tendency towards extraversion.[55]

PROCEDURES

In order to determine the extent to which students at the College of St. Thomas feel alienated from the academic goals of the school, a 25 point questionnaire regarding student attitudes and study goals was distributed to 52 students. The subjects responded in a short paragraph describing their academic attitudes.

Population

This questionnaire was administered to 52 College of St. Thomas freshmen, sophomores, juniors and seniors during study skills seminars, March 1984. They were asked to respond as honestly as they could.

Survey Instrument

This survey instrument will specifically examine six areas regarding academic alienation. These include: (1) importance of grades, (2) goals (3) feeling of belonging, (4) relevance of courses, (5) study skills, (6) role of the teacher. The statements are designed to elicit some generalizations about the cultural groups within the college and whether they are supporting the academic goals of College of St. Thomas students.

Classification of Responses

The responses to the survey will be classified under the following broad areas: (1) those students who do not feel alienated from the academic goals of St. Thomas, (2) those students who feel alienated from the academic goals of St. Thomas.

Content Analysis

Under the two broad classifications, collected information concerning student alienation will be categorized by the responses: Strongly Agree, Agree, Disagree, and Strongly Disagree to the 25 attitude statements. Results of this survey should reveal what kind of cultural community the College of St. Thomas is, and how its students feel about the support systems within that institution.

Limitations

This is a numerically limited sample. One must recognize that since the subjects are already College of St. Thomas students, they are above the average population in academic qualifications.

Utilization

The analysis of data will be distributed to those who are in a position or have interests which might be relative to the information gathered.

FINDINGS

Discussion of Responses

In regards to the importance of grades, in an n of 52, 28 (54%) indicated that they do not feel rejected by a "minus" on a test or paper. Twenty-five (47%) of the students prefer letter grades to pass/fail. Twenty-two (42%) of the students do feel inadequate when other students achieve better grades with less study time. Twenty-nine (56%) of the students would like to belong to a study support group. Thirty-two (61%) of the students feel that regular attendance is important for college success. Twenty-eight (54%) of the students feel that a GPA is not more important than getting an education. Lastly, twenty-two (42%) of the students are fearful of not "making it" in college studies.

In discussing the importance of goals, in an n of 52, thirty-seven (71%) of the students feel that College of St. Thomas students back them in their academic goals. Twenty-seven (52%) of the students prefer the high academic goals of the College of St. Thomas. Twenty-eight (54%) of the students prefer the high academic demands of College of St. Thomas courses. Thirty (58%) of the students feel that time spent on studying upholds their academic goals.

In response to a feeling of belonging, in an n of 52, 32 (61%) of the students feel they belong and are a part of their class, and 35 (67%) of the students feel that their circle of friends supports their goals in school. Responses were 22 (42%) agree and 27 (52%) disagree regarding possession of a "carefree" student image. Thirty-two (61%) of the students felt that they would look for other friends if the ones they had didn't support their academic goals.

When responding to the relevency of courses, in an n of 52, 29 (56%) of the students felt their courses related to their major field of interest, and 32 (61%) of the students are comfortable with their chosen major.

In regards to study skills, in an n of 52, 32 (61%) of the students feel that acquiring good study skills helps them in their academic work. Thirty-two (61%) of the students budget and plan their study time. Thirty-six (69%) of the students feel prepared to do college work. Thirty (58%) of the students would use tutoring and counseling help available at the College of St. Thomas. Thirty-one (60%) of the students are not impressed by those who brag that they never study until just before a test.

In discussion concerning the role of the teacher, approximately half of the sample, (26 students) were evenly divided regarding satisfaction with a class taught by a strict teacher. Thirty-three (63%) of the students feel comfortable asking their teachers for help in their course work. Approximately half of the sample, (26 students) were evenly divided regarding their sense of importance within the framework of the college.

Discussion of Personal Reflections

The students were asked to describe how their attitudes or feelings about study differ from or are the same as their friends. Many students have already developed their own support systems. These systems seem to evolve through need for positive and helpful reinforcement. Students began to build on this support system as they increased their experience from freshman to senior year. They described how studying is made more palatable by having people with similar interests and concerns to do it with. A number of pertinent comments surfaced including the following:

> I feel that my friends and I are all pretty serious about our education.
>
> My friends' study habits are irrelevant to our social interactions. They know I like the library and they respect that.
>
> I feel that the reason why my closest friends and I have such a close relationship has a lot to do with our study habits and goals.
>
> Most of my friends believe what you put into a course is what you'll get out.
>
> There are a few of my friends who are study-holics. This seems to

> give me motivation to hit the books as well.
>
> When studying, we share our attitudes, thoughts, and feelings about what we are studying, and we show interest in each other's studies.

Other comments reflected other points of view about support systems:

> Some of the friends I hang around with think that just because you have a light day coming up, you can go out and party the night before and not worry about studying. I like to party, but I feel that during the week it isn't necessary to do so.
>
> I feel a great many students pass old exams around. Therefore, they have a great advantage.
>
> I'm living on an intensive study floor in which the students study on an average of 5 - 7 hours a day. I feel that there is more to a college education than living and breathing school.
>
> I feel that this school is 99% oriented toward studying.
>
> Most of my friends are the same major as I am; therefore we tend to study the same subjects and help and support one another with classes.

> One thing bothers me. I can study for hours upon hours, and I still perform worse on tests as compared to my peers.
>
> I am in a sport which takes up a great deal of time. Some of my friends are done (sic) studying when I am just starting, so it is difficult sometimes to study.
>
> My complaint is that those students whose parents pay their tuition have more study time available, while the ones who have jobs to support their education have limited time.

SUMMARY

The purpose of this investigation was to examine the alienation of college students from the formal goals of college. This was pursued through a research of literature and survey of College of St. Thomas students.

The data supports a conclusion that in this limited sample, most College of St. Thomas students have developed mini-cultures or support groups to handle the pressures of studies. The goals of the school appear to be of a high quality, and most students appear to be functioning within the demands of those goals. We can conclude that the broad culture of the College of St. Thomas, as well as the smaller cultures of peer groups, are functioning in a positive way for the students that are a part of these cultures.

RECOMMENDATIONS

As a result of attitudes expressed and the effects of peer support, it seems evident that consideration be given to further the opportunities for academic peer assessment. Additional research for teachers and strategies to stimulate students could be developed. Further development of these ideas might be incorporated within the study of Circles of Learning, Cooperation in the Classroom, by David W. Johnson and Roger T. Johnson, University of Minnesota. This project focused on positive interdependence, individual accountability, face-to-face interaction, and cooperative skills. The goal is cooperation through support.

Other questions could be raised. Students who did not make it, or are unlikely to make it could be interviewed regarding their study habits. Does peer support make the difference? What about grade point averages in high school? Is this an important factor? What about SAT/ACT scores, and class rank in high school? Are there any clues here? What about high schoolalienation factors? Are certain personality traits surfacing here? Is there a positive correlation between high school and college success?

The goal is, therefore, to devise strategies to prevent student alienation from the formal goals of college.

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SURVEY INSTRUMENT

Please circle your class at St. Thomas: FRESHMAN SOPHOMORE JUNIOR SENIOR

Please circle the most appropriate response: SA - Strongly Agree; A - Agree; D - Disagree; SD - Strongly Disagree

1. I feel more comfortable and more successful in a class taught by a strict teacher. SA A D SD
2. I feel rejected when my grade on a test or paper contains a "minus." SA A D SD
3. I prefer pass/fail to letter grades. SA A D SD
4. I feel inadequate when other students appear to achieve better grades than I do with less study time. SA A D SD
5. I would like to belong to a support group which helps me study and achieve better grades. SA A D SD
6. I feel that most College of St. Thomas students do not back me in my goals for school. SA A D SD
7. I would prefer attending a school with lower academic goals. SA A D SD
8. I would prefer courses with lower academic demands. SA A D SD
9. I feel that the time I spend on studying upholds my academic goals. SA A D SD
10. I have a sense of belonging, and I feel a part of my class. SA A D SD
11. My courses in college relate to my major field of interest. SA A D SD
12. I do not feel well prepared to do college level work. SA A D SD
13. Looking back at the courses I have taken, I wish I had chosen a different major. SA A D SD
14. I feel comfortable asking my teachers for help in my course work. SA A D SD
15. I feel that regular class attendance is important to my success in college. SA A D SD
16. A grade point average is more important at the College of St. Thomas than getting an education. SA A D SD
17. I feel that acquiring good study skills could help me become a better student. SA A D SD

Marilyn Christian

18. I budget and plan my study time. SA A D SD

19. I feel that my circle of friends supports my goals in school. SA A D SD

20. I would make use of tutoring, counseling, or other methods of assistance if such were available at St. Thomas College. SA A D SD

21. I would prefer to have a more "carefree" student image rather than one of a "serious" student. SA A D SD

22. If my friends didn't support my goals in college, I would make other friends who feel as I do. SA A D SD

23. I'm just a tiny cog in the machinery of this college, and have no real influence over what goes on here. SA A D SD

24. I would like to be able to brag that I never study until just before a test. SA A D SD

25. I am fearful of not "making it" in college studies. SA A D SD

Thank you for your responses. Please take an additional 5 minutes to respond with a short paragraph. Describe how your attitudes or feelings about study conflict with, or are the same as your friends. What are they?

IMAGERY AND STUDY SKILLS

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ABSTRACT

The use of imagery as a psychological variable has enjoyed a current revival from its death at the pens of the behaviorists. Recent experimental research has shown that pictures can be used to enhance comprehension and greatly increase recall. Because they chunk a large amount of information, images are very efficient packers of information. But students frequently have to be taught the process of making and using images in order to improve their study skills. This process can be illustrated by having students form, discuss, and differentiate the auditory, visual and kinesthetic images they have of their study space vs. a vacation spot. That sort of discussion does not guarantee the student will, in fact, generate images of any sort. But it does make the process more overt, and give official permission for personal exploration. Later, students can be shown how to form meaningful images that will give them a new approach to surveying a text, a new way to be comfortable reading faster, a way to think about comprehension and retention by visualizing, and a way to prepare themselves for brainstorming ideas for a paper. Finally, the use of images in developing memory skills and overcoming test anxiety is outlined.

Scientific psychology has had a love/hate relationship with the concept of imagery for generations. When the first psychological laboratories were established in Germany in the late 1800's, much research was carefully executed to find just how images in the mind controlled behavior. There were many successes. But the results were not uniformly positive. Psychologists at Wurtzburg showed, somewhat disdainfully, that some behavior just "appeared" without any perceptible mental image. American radical behaviorists, following the lead of J.B. Watson, caustically rejected the very notion of mental entities as a fit subject for psychological concern. More recently research with hallucigenic drugs, radar screen observers, solo pilots, snow cat drivers, psychotherapists, hypnotists, artists, and athletes have led to a resurgence, and even active embrace, of the concept of image by psychologists. This paper reports some use of the image by college students.

REVIEW OF RESEARCH:
Pictures and other graphic images in text do improve learning (Alesandrini, 1982). Adults who saw pictures while reading about a revolution did better than those who read the unadorned text. The effect was greater for science material. Instruction about heart physiology was learned better when illustrated (Dwyer 1972). However, the difference only appeared on questions that asked for drawings as responses. One critical variable is the relevance of the illustration to the text. It is not sufficient to inject a sketch into a text in order to achieve positive effects. The picture must illustrate the relation between concepts. Operationalizing the notion of "relation between" is difficult. Yet Arnheim (1979) argues that not only should illustrations show relations, they should do so artistically, in order to be maximally effective.

Another image related variable that enhances learning is the concreteness of a word, (i.e. the probability that it will elicit a reportable mental image). The word "domicile" is less concrete than the word "house". Concreteness has been shown to facilitate learning, (Jorgenson and Kintsch, 1973), recall, (Johnson 1974) and comprehension (Tirre et. al., 1979). The latter presented adults with equally comprehensible passages that varied on the concrete-abstract dimension. The more concrete passages were comprehended better, using a short answer test.

Since pictures and concrete words seem to enhance learning, it is not surprising that instructing students to make images while reading is facilitative. Adults have been shown to learn easy material better when instructed to use imagery (Anderson and Hidde (1971), Rosco (1975). In a series of three integrated studies Jamison and Schimpf (1980) showed that students instructed to create images connecting concrete nouns (glove-roof) did better than students not so instructed. In addition, they showed that instructing students what connecting image to use, even if it was a commonly effective one, was not as facilitative as just instructing students to make their own image and allowing the imaging process to run by itself. However, the process is not automatic. Learners instructed to make their own image and allowing the imaging process is not automatic. Learners instructed to make images of new scientific material, that they did not know well, were not helped (Lutz and Rigby, 1977).

Why should the use of pictures and self generated mental images make learning and memory easier? Haber (1981) gives several examples of the way organized material is recalled. One of his examples is very familiar. The seven random digits of a telephone number are not easily recalled without many repetitions or some sort of mnemonic. However, the numbers 124-8163 are easy to recall after one notes the doubling progression. In fact, it would be easy to remember 124-8163, 264-1282, 565-1210 and so on, aided by the easily stated rule that elements in the string are successively doubled and then collected into alternating groups of 3 and 4 digits. Once the rule is known, learning and recall seems easy, almost effortless.

The situation is partially analogous, says Haber (1981), with regard to visual material. Humans as observers do not see lines and curves and spaces in visual scenes. They see "faces", or "trees" or "mountains under white fleecy clouds". The situation is somewhat akin to the ability of a skilled reader who does not see letters, only words. The organization of lines and curves and spaces into chunked perceptions may occur automatically, once an observer has learned the general name of a series of particular visual events.

It is fascinating that information represented visually can be learned and retained much more efficiently then if it is verbal. Standing, Conezio and Haber (1970) report that subjects shown 2500 pictures of ordinary scenes exceeded 90% correct recall, far above recall for words, sentences or numbers. Erdelyi (1976) showed that recall and recognition scores improve over time when stimuli are pictures, but did not improve when subjects retained words. Moreover, when subjects used visual imagery, recall improved.

Haber (1981) takes the view that visual images are more efficient for learning and recall because they are organized automatically at the neural level. He extends Miller's (1956) notion of chunking for recall from the verbal to the visual modality. Haber states that visual "chunking occurs automatically because the human visual system has evolved to perceive scenes, and it organizes all light stimulation coming to the eyes as if it has been reflected from a scene stretching away in front of the eyes" (1981, page 5).

We have seen that imaging enhances comprehension and learning. Pictures aid learning about social and natural science. The more concrete and imagible a word, the easier it is to learn, especially if the learner is in charge of generating the image. Finally, pictures greatly enhance recall. Given all those findings, how can adults be taught to use them and do a better job in study?

PREPARATION TO USE IMAGERY:

Simply directing a student to form an image while reading or listening may not be effective. For students of a realistic or practical inclination, the notion of an internal image is foreign and unreal. To students who want to be "right", being asked to make an internal response that can not be evaluated and may be incorrect is threatening. For these students especially, and probably for others as well, it is desirable to start with some satisfactory explanation of the imaging process as it applies to education. One such rationale is the auditory, visual and kinesthetic representation system of

Bandler and Grinder (1876).

In the formulations of Bandler and Grinder, humans make internal representations or maps of their experienced world. Maps of past experience, or future hopes and fantasies, may be represented as visual, auditory, or kinesthetic images. Students differ in the way they study and remember the ideas they have learned. But most students, regardless how pragmatic or compulsive they are, find the idea of differences in memory to be fascinating. It is easy to offer an exercise that will help them find out which is their favorite, most lifelike way of recalling the world.

To help students find out about their personal representation system, ask three questions about the place where they usually study. Request, in preparation, that they sit back into their chairs, take three deep breaths, relax deeply, and if they wish, to close their eyes. Then ask:

1) Can you see the place where you usually study? Can you see the color of the walls, the shape of the table, the illustrations on the page?

Wait a few moments while the images form. Then ask:

2) Can you feel the space where you study? Can you feel the chair against your back, the weight of a pen in your hand, the thickness of the page between your fingers?

Again, wait a while, and then continue:

3) Can you hear the sounds around you? Can you hear the sounds outside your study area, the sounds of a pen writing on paper, of your own breathing?

After that first image exercise, ask each student which was the most vivid and lifelike image. Even the most reluctant will have some answer. Then repeat the exercise. Ask the students to pick a vacation spot or some time or place away from school when they were very safe and productive and happy. Repeat the three questions, using general prompts to recall the color or shape or size (visual) or loudness or rhythm or change (sound) or hardness or weight or temperature (kinesthetic). Again ask which of the images were most vivid, most lifelike.

After the exercise, engage the class in some discussion about the differences in their images, and the differences between the image of a study space and a vacation space. Usually, in both spaces the visual image is most lifelike; usually in the vacation spot the feeling image becomes stronger. I like to suggest that it would be interesting if students could form as strong kinesthetic images during study as they can when safe and in control. Most students lack the feel of what they are about although they see their duty clearly enough.

These illustrative data in Table 1 were collected Spring, 1983 in a How To Study class, when 14 students were asked to rate their images on a scale of 1= blank, to 10= vivid and lifelike.

Table I

	Study Image	Vacation Image
Visual	9.8	9.0
Auditory	6.8	7.2
Kinesthetic	6.8	8.0

Mean Vividness and Lifelikeness of Study and Vacation Images

Notice that the Visual image is most lifelike, and that the feeling image is stronger when the student imagines a safe and relaxed place.

The value of the exercise is not that it generates valid data about what really happens inside a student, nor that it helps pinpoint the student's favorite or most preferred representational system, nor that it illuminates any differences between study and non-study use of imagery. The value is that it allows students to begin talking to each other as if they really did have images, and allows the teacher to begin using images as a metaphor for ways to develop study skills.

HOW TO USE IMAGERY TO TEACH STUDY SKILLS

One of the most common study skills is the survey used as part of most study systems, Robinson (1946), Pauk (1984), Raygor and Wark (1980). Indeed, research seems to indicate (Wark, 1964) that the survey step is the most effective, and least questionable step in good study. But students seem to need a training technique that makes a survey easy to use. One such method is to ask students to imagine a hawk as preparation for study.

In preparation for teaching the survey step, students are told to sit back, take three deep breaths, and relax. Then they listen to the following script:

The Hawk

Sit back in your chair and place your hands in your lap. Look at your hands and notice the differences in the colors of your skin around your fingernails, and as you do that you can feel the weight of your body pressing in the back of the chair while you also listen to the sounds of your breathing and feel your heart beat.

You may want to close your eyes as you imagine yourself standing out in a wide flat open place, empty and flat as any place you can imagine. Now in the middle of the plane you can create the image of a rocky, rugged, craggy mountain, solid and massive, heavy and impressive, very weighty. Let some of the sides become smooth; straight up and down. Notice how other sides may show many horizontal layers, piled one on top of the other for numberless ages.

High, high above the mountain in a blue blue sky is a small moving dot. You can see it, just barely. As you look closer you see more clearly the head and wings of a hawk, sailing high above the mountain, looking down at the trees, like green dots printed on the mountain, at the streams like thin blue and green and silver lines, at the lakes and meadows, the open spaces seemingly empty and yet filled with life.

Let yourself drift down with that hawk, closer and closer to the mountain, closer to one of those interesting mountain meadows, those open spaces filled with so many things. Let yourself drift on the wind back and forth from one end to the other of that meadow, in wide slow circles. You can see from one end to the other. You can see how the high ground stands out, commanding and important, and you see the low back ground. Hawks, you know, have amazing vision. You can see broadly for miles. Or you can zoom down and see very small details. That is interesting, as you pass over the meadow you can look down and see things to eat, things that can nourish you and feed you. Slowly you drift back and around, enjoying the feeling of getting more information about the meadow as you drift over it."

The images of a Hawk is designed as a metaphor to help a student achieve some new behavior that would seem strange without specific help. The mountain on the plain is of course a book on a table. The meadow is a chapter or a page, the Hawk doing a circle is the reader doing a survey.

How do students respond to this exercise in applied imagemaking? Students in a How to Study

Class listened to the Hawk, and then surveyed a chapter in a book they had never seen. Reactions of the 14 students were:

Positive comments
- Hawk helped me relax
- Helped me feel good about my survey
- I can make my study more personalized
- Helped me see details in a book

Negative comments
- I didn't consciously use the Hawk

Using Imagery to Increase Rate

The Hawk image can be used for teaching more than survey. With the right instructions, the image is a good one for increasing reading speed. In an experimental setting, a new sample of 12 students in a How To Study class were read the Hawk before reading the two rate exercises from the McGraw-Hill reading test, Form A. They were given 1 minute to image the Hawk before reading the easy passage. That exercise alone should of course increase their rate. Their subjective reaction was that the Hawk image slowed down their rate. On the basis of that report, they were instructed to image the Hawk before doing a 1 minute survey of the second and more difficult passage. But they were to image the Hawk flying briskly over the meadow, moving fast, skimming the tree tops. The data in Table 2 suggest that the students can in fact make impressive gains using the Hawk image.

Table 2

	Relaxed Hawk Easy passage	Brisk Hawk Hard passage
Mean words per minute	276	272
Mean rate percentile	54	76
Mean raw Comprehension	6.25	7

Effects of Relaxed and Brisk Imaging Instructions of Reading Scores

There are some interesting aspects to the results. Note first that in spite of the 1 minute preskim following a relaxed Hawk, the mean rate is only slightly above the 50th percentile for the easy passage. It appears that the students were reporting correctly when they said the relaxed Hawk slowed them down.

Note also the different effect of imaging a brisk and rapidly moving Hawk. The mean rate was about the same, but since the passage was harder, the percentile was higher. Note finally that the number of fact items retained out of 10 is very similar for the two conditions.

USING IMAGERY TO INCREASE COMPREHENSION

The technique of image making, once it has been established and practiced, can be used to help students better understand their reading. As part of a teaching exercise, students are asked to read a paragraph, and then take notes on the text by drawing what they read. Students who have practiced imaging have little trouble with the assignment. The effects are very interesting.

There seems, roughly, to be three types of imaging that students do. One is a drawing that suggests a confused rejection of the whole text. The reader seems to be saying that not only do they not understand the passage, they do not even want to. A second and largest group of students tends to give a hieroglyph, showing individual ideas or words in simplistic depiction. The final and probably most sophisticated type of drawing shows, abstractly, the relations between the ideas in the passage.

For example, an exercise passage describes political theorists as the integrators of social science data, who find the base for social policy decisions in the masses of information from the research of other, slightly derogated, specialists (Raygor and Wark, 1980, page 6). The first type of drawing may be of a stick figure professor standing in front of a lectern, with an empty cartoon balloon over his head. There is nothing in the text about political science professors giving stuffy, boring lectures. Yet that seems to be the sense of the paragraph as reflected in that level of drawing. Clearly, the interpretation is based on something other than content. The second type of image may be a fairly correct picture of a mountain (of data) separated into piles marked "important" and "waste". The image is exact, more or less correct, but rather pedestrian. The reader seems to understand the passage in an acceptable way. The final type of image shows the relation of the ideas in the passage. One example is a funnel-like image, abstractly showing the idea that political theorists filter and condense data. In terms of Haber's comments above, such an image represents excellent chunking, and should be recalled very easily.

When students are shown the different drawings from the same text they report new awareness. They see that there are several ways to comprehend a passage. They see that their way to read the paragraph may not be very effective for memory and retention. Type 2 images, which contain many explicit details, are harder to recall than the more abstract but still meaningful image of a political science funnel. Subjectively, with only student reports as evidence, it appears that imaging is a way to help students understand the notion of comprehension, and perhaps enhance the process.

USING IMAGERY TO TEACH WRITING

Images can be used in teaching students to write an effective theme. One way to help poor writers is to note that there are two critical steps in the writing process: generating ideas, and placing the ideas in a reasonable organization. Typically, the step of generating is taught as a type of brainstorming. Students are told to think about the title or something to do with the paper, and then let their imagination go to work. The instructions usually include support for accepting any ideas that come forth, and exhortations to be as "creative" as possible. For some students the process just does not seem to work. Certain images may help.

One critical aspect of brainstorming to generate ideas for a paper is that the student doing the brainstorming should have a sense of their own ability to do the job. Particularly for students in a How To Study class, an assignment to do a paper may produce a feeling of incompetence. Students immediately image themselves in an impossible situation, doomed to repeat all the errors of their past. However, with the right suggestions, students can produce much more helpful images, to begin the process of generating ideas.

One way for students to begin creating useful ideas is to start with an image of themselves being successful. In one exercise in the How To Study class, the assignment was to write a paper supporting business internships for undergraduates. After a discussion of what an internship involved, students were asked to generate 15 or 20 ideas for the paper. Some students had no trouble, others produced nothing of value. Then the class was asked to generate an image for themselves. They were to imagine themselves standing effectively at the head of a big conference table, lecturing a collection of expensively dressed but subservient company executives about the need for a well paid internship in their individual corporations. The students were to imagine themselves giving a strong, effective and persuasive speech on the value of an internship. The executives were, in imagery, to be supportive, appreciative and willing to contribute. With a few minutes spent in generating that image of success, the flow of student ideas was remarkable.

OTHER USES OF IMAGERY IN A HOW TO STUDY CLASS

There are at least two other ways that mental images can be used in a study skills class. One application is the teaching of techniques for memorizing. Methods for improving long term recall have been studied extensively. One good popular summary of the research (Lorayne and Lucas 1974) suggests ways to input, organize and retrieve general material. Browning (1983) has shown extensive applications of memory techniques to solve study problems. Both authors stress the value of active imagery in the process. Students are shown how to develop concrete imagery of abstract concepts, how to organize and associate their images, and to retrieve them.

Another area of application is the treatment of test anxiety. An important review of the subject (Sarason 1980) concludes that the best treatment for test anxiety is a combination of careful study and cognitive restructuring. In practice, that means teaching students to use good study skills and to see themselves being more effective in a test situation, mentally rehearsing the steps of good test taking, visually and kinesthetically imaging themselves as successful. Research evidence (Mitchell, Hall and Piatkowski 1975; Tyron 1980) clearly supports the use of coping imagery.

SUMMARY

There is sufficient evidence in the past decade to suggest that contemporary American psychologists and educators can take seriously the notion that student imagery skill is relevant to learning. Clearly, the image has become an acceptable scientific concept again. This paper cites research evidence of the way imagery has shown positive effects in learning and comprehension in laboratory situation. Further, it contains some examples of the use of images to enhance the learning of certain study skills in the classroom. But the situation for a teacher or counselor is not at all simple. While image oriented instruction seems to work in many cases, often it does not. Why? In fact, how is a teacher to know that any student is imaging at all? What are the valid and reliable tests of imagery? If we find out how to measure imagery ability, will we also find out how to increase and use it? There is a lively interchange between science and art that will lead to more and more applications of the image concept in both worlds.

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DO GOOD STUDENTS HAVE A READING SPEED LIMIT?
DO POOR STUDENTS?
DO NURSING STUDENTS READ LIKE ORDINARY PEOPLE?

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ABSTRACT

Is there an optimum reading speed? Does speed place limits on comprehension? The results of this study suggest that the answers to these questions is "no" for good students and "yes" for poor students or nursing students at Muskegon Community College.

In the rapid-reading course at Muskegon Community College, an odd growth pattern was observed. If a student was given reading selections at three different levels - say 5th, 7th, and 9th grade and the student read the 5th grade material at 275 wpm with 73% comprehension, and the 7th grade at 280 wpm with 67% comprehension, that student would read the 9th grade assignment at 300 wpm with 60% comprehension. When speed increased and comprehension dropped, this prompted us to ask, is there an optimum speed at which students should read, but which they are reluctant to adopt? Is there a speed limit on comprehension; a place where the comprehension wheels started to shimmy? The results of this study suggest that answer is no if you are a good student; yes if you are a poor student or a nursing student at Muskegon Community College.

Sample Description

A total of 392 community college students from two levels of English Composition courses were given the Nelson-Denny Reading tests form D or E. These test forms, are not comparable in percentile rank, but both do yield a grade level, and it was assumed that these grade levels were comparable.

Our English 101 students were ordinary college freshmen of various ages who had either passed an English 100 class (Refresher English) or else passed a qualifying (grammar and writing) exam. The students in English 100 had either failed the qualifying exam or else had volunteered to take the Refresher English, regardless of their scores. The qualifying exam is an institutionally developed instrument and has proven to be an excellent screening instrument.

Description of the Study

Nursing students, in order to enter their training, are required to demonstrate a 10th grade reading level in both vocabulary and comprehension sections on the Nelson-Denny test. Those in this study were given the form D when they applied for the nursing program. Most tests were administered during the past year; some in groups, some individually. All were aware of the impact of this test upon their futures. Nursing students scoring below the minimum level are required to take reading courses until they either qualify or abandon their quest. They were excused from the English classes at the time non-nursing students took form E of the Nelson-Denny. They were told it was a diagnostic instrument which would be used to uncover reading weaknesses but would not be used in grading. Detailed interpretations of the results were given within a week after the test, along with a description of reading courses being offered.

A total of 162 nursing students and 230 non-nursing students were tested. English 101 students numbered 279; English 100 students, 103.

The student scores were arrayed by computer according to reading rate, comprehension questions encountered (including those skipped), comprehension %ile score (according to test) and vocabulary %ile score.

Scores were listed by rate comparing comprehension and vocabulary scores, then listed by comprehension scores. (Table I).

Table I

COMPREHENSION QUESTIONS ENCOUNTERED
COMPARISON OF SPEED WITH COMPREHENSION SCORES

Group	Avg. Speed	Mean Comp. Score	% in Group
		36 Questions Encountered	
101	293	83 %ile	33 %
Nursing 101	298	58 %ile	16 %
100	243	74 %ile	8 %
Nursing 100	266	36 %ile	18 %
		30+ Questions	
101	273	75 %ile	70 %
Nursing 101	277	60 %ile	43 %
100	230	64 %ile	29 %
Nursing 100	250	40 %ile	34 %
		24+ Questions	
101	258	68 %ile	92 %
Nursing 101	253	48 %ile	82 %
100	197	45 %ile	70 %
Nursing 100	251	34 %ile	64 %
		16+ Questions	
101	253	66 %ile	99 %
Nursing 101	244	43 %ile	99 %
100	188	36 %ile	100 %
Nursing 100	231	26 %ile	94 %
		Overall	
101	252	64 %ile	100 %
Nursing 101	244	43 %ile	100 %
100	188	36 %ile	100 %
Nursing 100	228	25 %ile	100 %

Analysis

Nursing students, at any given number of questions encountered, scored lower in comprehension than their counterparts, both in 101 and 100 classes.

Nursing students in English 100 scored lower in comprehension and higher in rate at every level of questions encountered, indicating that they read faster and more carelessly, and guessed at more answers.

Nursing students in 101 scored very close to the non-nursing students in speed at any given number of questions encountered, but consistently scored lower in comprehension, also indicating more guessing.

(1) English 101 non-nursing students showed much stronger vocabularies than English 100 non-nursing students.

(2) English 101 non-nursing students and English 101 nursing students exhibited very similar vocabularies.

(3) English 101 non-nursing students demonstrated higher comprehension scores than English 100 non-nursing students at every speed.

(4) English 101 nursing students demonstrated higher comprehension scores than English 100 nursing students at every speed.

(5) English 100 non-nursing students reached their highest comprehension scores at 201-250 wpm. Between 251 and 300 wpm their comprehension scores fell. However, those students reading above 300 wpm scored well. English 100 Nursing groups appeared to hold their own or improve as their speeds increased. Non-nursing 100 students, on the other hand, had a decided wobble in their performance about 250 wpm.

(6) English 100 Nursing students reading below 200 wpm scored the poorest of all the nursing groups in comprehension. However, this slow group scored highest of all Nursing 100 students in vocabulary.

(7) At any speed above 200 wpm the non-nursing groups scored better in comprehension than their nursing counterparts. Below 200 wpm the groups were almost tied.

(8) The English 101 students at any given speed scored better - often considerably better - than their English 100 counterparts in both vocabulary and comprehension.

(9) Nursing students at any given number of questions encountered (whether answered or not) scored lower in comprehension than their non-nursing counterparts.

(10) Nursing 100 students scored lower in comprehension and higher in rate at every level of questions encountered, indicating that they read faster and more carelessly, choosing incorrect answers more often.

(11) Nursing 101 students scored very close to regular 101 students in speed at any given number of questions encountered, but consistantly scored lower in comprehension.

Summary and Interpretation

1. There is a wide difference in vocabulary and comprehension scores between English 100 or English 101 students, both nursing and non-nursing students.
2. There is little difference between vocabulary scores for English 101 nursing and non-nursing students at every speed listed. There are wide variations between the vocabulary scores of English 100 nursing and non-nursing stuents, however.
3. Comprehension scores for non-nursing English 101 students continue to rise as the speeds increase; nursing 101 students, however, level off at 200 and do not improve with speed.

4. Comprehension scores for non-nursing and nursing 100 students are erratic as speeds increase, indicating skill-clutter of some kind. However, the fastest 100 readers in either

nursing and non-nursing classes scored the highest in comprehension and very well in vocabulary.

Conclusions

Nursing students are driven by the anxiety over the impact of their performance on their career choice. Non-nursing students are less compulsive, since no adverse consequences are associated with the test results. The nurses, therefore apparently tackle the test more frantically, reading faster and doing less well.

The fastest English 100 readers may well be a group who belong in English 101. They read fastest; they read best. Perhaps their placement tests were not good measurements of their ability, or perhaps they are voluntary 100 students with an inaccurately low opinion of their language skills. It would be well to examine them in more depth.

In general, the faster a good student reads, the better the comprehension. This does not hold for poorer students. For poorer English students, permission to take courses in speed reading should be given only on an individual basis. Rapid reading courses appear to be justified in having language-level pre-requisites.

Do good students have a Reading Speed limit? Not below 300 wpm but they might have one at higher speeds. Do poor students? Yes, somewhere around 250 wpm the group's comprehension levels get very unsteady and begins to deteriorate.

Do nursing students read like ordinary people? Not when the reading test is crucial to their future. In that case they tend to increase reading speed at the expense of comprehension.

Can any advice be given to nursing students taking reading tests? Probably, but advising an anxious student to slow down during a timed test may do more harm than good.

Flaws in the Study and Recommendations

We have compared four groups of students taking two different forms of a single reading test (Nursing students form D, copyright 1973, Non-nursing students form E, copyright 1981).

The English 101 nursing and non-nursing vocabulary scores are very close, but all other comparisons between nursing and non-nursing students show considerable variation. The timed section of both tests came from the same book: The Winged Horse by Joseph Auslander and Frank Hill, which we measured at 9th grade level; the other comprehension sections have been updated in the form E/F to reflect modern interests. It is possible that the vocabulary tests from forms C/D and E/F are almost interchangeable, but that the comprehension sections, with the exception of the first timed example, are dissimilar. It is even possible that the grade levels, have fluctuated somewhat from 1973 to 1981 in a way neither addressed nor studied.

Earlier it was theorized that those students in English 100 classes who read most rapidly and well were, in ability, de facto English 101 students. Perhaps they aren't. Maybe they are good readers but poor writers and the English screening test put them right where they belong. Or maybe there isn't all that close a connection between skill in reading and skill in writing.

A further examination of the success or failure of all the English 100 students in the study might be useful, not only their success in the 100 classes, but their success in a future English 101 class as well.

It would be especially useful to be able to cross-reference the Nelson-Denny Reading Tests forms C/D and E/F, since there must be many colleges which use all four forms. This writer hopes that when form G/H of the test is published, it will be accompanied by data showing how percentile ranks or grade levels for all six forms can be compared with one another.

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THE WAYNE STATE UNIVERSITY STUDY SKILLS INVENTORY: A CRITERION-RELATED VALIDATION STUDY

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ABSTRACT

The purpose of this study was to validate an assumption that successful students practice most of the skill areas identified in the W.S.U. Study Skills Inventory at least half of the time. 169 W.S.U Liberal Arts Honors Students participated in this effort and provided data for three major areas of concern: 1) needs and non-needs as related to study skills, 2) responses to an open-ended study skills statement, and 3) a student demographic profile. The results do indeed support the assumption inherent in the W.S.U. Study Skills Inventory and the findings also provide a foundation for further research.

Needs Assessment

Approximately five years ago (c. 1980) a substantial shift in the Wayne State Learning Center enrollment resulted in increasing numbers of students opting for individualized study skills assistance in the laboratory rather than enrolling in classes of the same nature. Up to this point, diagnosis of study habits was conducted primarily by means of one-on-one interviews. It soon became apparent that with the increased enrollment this method seemed impractical due to the amount of time required. Also, paraprofessional staff who conducted these interviews required a substantial amount of supervision. Therefore, the decision was made to adopt an instrument that would be part of a systematic, diagnostic-prescriptive procedure for individualized assistance in the Study Skills Laboratory program.

Development of Instrument

At that time, the Survey of Study Habits and Attitudes (Brown-Holtzman, 1953) was the most commonly used instrument used for diagnosis of study skills needs in learning centers. It was designed to predict academic success rather than to be used as a diagnostic-prescriptive instrument. It was also found that this survey did not span all the skill areas commonly requested by W.S.U. students. These areas included study preparation, time management, test-taking, lecture notetaking, reading comprehension, vocabulary, test anxiety, textbook reading strategies, reading rate and memory techniques. A further search did not uncover an appropriate instrument for diagnosis and prescription of study skills.

Hence, the decision was made to develop a Wayne State University Study Skills Inventory and the following procedure was utilized. A statement pool containing 10-15 items per skill area was generated. After review and deliberation, five statements per each area were selected from this pool resulting in a 50 item inventory.

A response sheet was created in accordance with the 50 statements that allowed the student to select from five possible answers. Following is the guide representing definitions of the response choices:

(R) Rarely/Never - almost never
(S) Sometimes - once in a while
(F) Frequently - about half the time
(G) Generally - between 50-90% of the time
(A) Always - more than 90% of the time

For scoring purposes, answers to statements report a need or non-need dependent upon the statement itself. For example, if the statement "I get distracted when I study" was answered by the choices 'frequently,' 'generally,' or 'always' a need would be indicated. On the other hand, if a statement like "I use a study schedule" was answered in the same manner, no need would be indicated because the skill was being practiced. In addition, a hand-scoring template was devised and an interpretation form was created for the purpose of sharing the inventory results with students.

Upon completion of the developmental phase, the Study Skills Inventory was sent to professionals in the Educational Testing and Evaluation field as well as those involved with learning assistance programs for content validation. Then, the Inventory was piloted and field tested. Pilot testing was conducted with the assistance of 50 students from Reading & Study Skills classes. Student evaluation of the inventory revealed some statement ambiguity. Those statements were revised and the Study Skills Inventory was field tested on 150 students registered for individualized study skills assistance programs before the final version of the instrument was adopted.

Since 1983 the W.S.U. Study Skills Inventory has been utilized as a diagnostic-prescriptive instrument in the learning center and serves as the initial step of a systematic delivery approach to learning assistance. The inventory itself has been recreated on a computer scanned sheet for use with large groups where hand scoring would be extremely time consuming. Some of the large groups that have taken the Study Skills Inventory include entering freshmen, Project 350 students, and Post-Baccalaureate Pre-Medical students.

Purpose of this Study

To further broaden the validation base of the W.S.U. Study Skills Inventory, a criterion-validation research project was initiated and comprises the content of this report. Criterion-validity refers to comparing scale scores with one or more external variables, or criteria, known or believed to measure the attribute under study (Kerlinger, 1973). The primary purpose of this effort was to validate an assumption that successful college students use a majority of the 10 skill areas identified in the inventory at least half of the time.

Methodology

The population used in this study consisted of students in the W.S.U. Liberal Arts Honors program who were required to maintain a grade point average of 3.5 in their major area of study. One further criterion for this study was that they must have completed at least one semester of coursework at W.S.U. Thus, limitations were placed upon this study due to the criterion base and the lack of random sampling.

Guidelines set forth by Gay (1980) were used to initiate the survey procedure. A mailing list for all W.S.U. Honors students was secured which included 370 names and addresses. The students were mailed a complete Study Skills Inventory packet, a student demographic profile form, and an open-ended statement related to study skills which read, "The most important study skill that a successful college student needs is:". An introductory letter was included which explained the purpose of the study, the commitment to share results, and the assurance of anonymity and confidentiality. Directions for completion of the Study Skills Inventory packet were specific and presented in numerical sequence. A deadline for return of the completed survey was stated and a postage paid return envelope was provided for mailing (Fowler, 1984). Later, a follow-up letter was forwarded to all 370 Honors students in order to thank those who participated and/or to encourage those who did not respond to do so at their earliest convenience.

In total, 169 survey packets were returned to accounting for a return rate of 46%. The inventories were scored and results converted to percentage form. The replies to the open-ended study skills statement were coded as to their categorical nature, tallied, and rank ordered as to the number of times cited. Finally, the student demographic profile information was compiled and a total test reliability coefficient was found.

Analysis of Data

The results provide data for three major areas of concern; 1) needs and non-needs as related to study skills, 2) replies to the open-ended study skills statement, and 3) a student demographic profile. With regard to the 50 statements and 10 skill areas of the Study Skills Inventory, the data are presented in terms of needs and non-needs representative of answers given (see Tables 1,2). In the skill areas of study preparation, test-taking, lecture notetaking, reading comprehension, vocabulary, test anxiety, textbook reading, reading rate, and memory the students reported that they did utilize those study habits at least 50% of the time (representing non-need). The highest percent of non-need was found in the area of reading comprehension (93.5) while the lowest percent of non-need was found in time management (47.2).

Table I

Need and non-need percentages found in the 10 skill areas of the Study Skills Inventory

Skill Area	Need		Non-Need	
	%	n=	%	n=
Study Habits	23.2	39	75.8	130
Time Management	52.8	89	47.2	80
Test-Taking	11.5	19	88.5	150
Lecture Notetaking	29.6	50	70.4	119
Reading Comprehension	6.5	11	93.5	158
Vocabulary	19.8	33	80.2	136
Test Anxiety	8.4	14	91.6	155
Textbook Reading	46.2	78	53.8	91
Reading Speed	17.9	30	82.1	139
Memory	18.9	32	81.1	137

Upon examination of the 50 items individually it was found that 100% of the subjects reported that they understand words used in textbooks and lectures. It was also reported by 100% of the subjects that they have the ability to read examination questions correctly.

See Table 2.

In response to the open-ended statement, "The most important study skill that a successful student needs is, "45% reported time management. In descending order the alternative replies were; reading comprehension 12%, lecture notetaking 8%, no reply 6%, concentration 5%, motivation 4%, organization 3%, textbook reading 3%, memorization 2%, practice 2%, reading speed 2%. All other responses reported 1% or less (see Table 3).

See Table 3.

The demographic profile revealed that 64% of the subjects were female, 36% male, and that the average age of the subjects was 19 years. College rank of the students surveyed was distributed as follows: 19% freshmen, 42% sophomores, 34% juniors, and 8% seniors. At the time of the study, the average credit hours enrolled was 15 and the mean overall grade point average was 3.7. The typical W.S.U. Honors student also worked an average of 17 hours per week.

The Hoyt estimate of reliability was found to be .85.

Interpretation of Findings

In general our findings support the assumption that successful students do indeed practice most of the skill areas identified at least half of the time. Nine of the 10 skill areas repre= sented greater than 50% non-need with regard to assistance in those areas. In the areas of test-

Table 2

Needs and non-needs percentages found in the 50 questions of the Study Skills Inventory

Area & Question	Need %	n=	Non-Need %	n=	Missing
Study Habits					
I get distracted when I study.	18.4	48	71.6	121	
I turn off the radio and television when I study.	26.6	45	73.3	124	
I complete my assignments on time.	2.4	4	96.7	165	
I can study effectively even when the subject is dull and boring.	38.5	65	61.5	104	
I use a specific place to study.	20.1	34	79.8	135	
Time Management					
I have enough time to study adequately.	26.2	44	73.8	124	1
I use a study schedule.	55.7	93	44.4	74	2
I schedule review times regularly throughout the semester.	74.0	125	25.1	44	
I begin studying two days before an exam.	66.1	111	33.9	57	1
I use my study time effectively.	24.2	41	75.7	128	
Test-Taking					
I use a review system before taking exams.	13.8	23	86.2	144	2
I misread questions on exams.	00.0	0	100.0	169	
I finish my exams within the allotted time.	1.2	2	98.8	167	
I am careful to avoid misinterpretations when taking tests.	2.4	4	97.6	165	
When taking an exam, I answer the easy questions first.	39.3	66	60.8	102	1

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Table 2 (Cont'd.)

Area & Question	Need %	n=	Non-Need %	n=	Missing
Test Anxiety					
I feel calm when taking exams	18.4	31	81.5	137	1
I get nervous even thinking about exams.	7.7	13	92.2	156	
I avoid studying for difficult exams.	1.8	7	95.9	162	
When I get nervous during an exam, I can calm myself.	13.1	22	86.9	146	1
I "blank-'out" when taking exams.	1.2	2	98.9	167	
Textbook Reading					
I preview a chapter before I read it.	82.3	136	17.8	30	
I use a particular method when I study a textbook.	35.5	60	64.5	109	
When I read a chapter everything seems important.	14.8	25	85.2	144	
I underline whole paragraphs in my textbooks.	9.6	16	90.4	151	2
I review a chapter immediately after I read it.	70.4	119	30.5	50	

Table 2 (Cont'd.)

Needs and non-needs percentages found in the 50 questions of the Study Skills Inventory

Area & Question	Need	n=	Non-Need	n=	Missing
	%		%		
Lecture Notetaking					
During a lecture I can record the important information and still listen to the lecturer.	8.3	14	91.7	154	1
My lecture notes are clear and organized.	13.6	23	86.4	146	
My lecture notes are good study aids for exams.	7.2	12	92.9	156	1
After a lecture I review my notes as soon as possible.	75.1	127	24.8	42	
When I review my notes, I formulate questions to quiz myself.	43.8	74	56.2	95	
Reading Comprehension					
I understand what I read.	1.2	2	98.9	167	
My reading skills help me to do well in my classes.	14.2	24	85.8	145	
I can express what I read in my own words.	4.1	7	95.9	162	
I can identify main ideas when I read.	2.4	4	97.6	165	
My mind wanders when I read.	10.7	18	89.4	150	
Vocabulary					
I understand the words uses in my texts and lectures.	00.0	0	100.0	169	
When I come across a word I don't know, I use the dictionary.	333.2	56	66.9	113	
I use my glossaries in my texts.	20.1	34	79.9	135	
I work at increasing my vocabulary	38.7	65	61.2	103	1
My vocabulary is adequate for expressing my thoughts.	7.1	12	92.9	157	

Table 2 (Cont'd.)

Area & Question	Need %	n=	Non-Need %	n=	Missing
Reading Speed					
I am satisfied with my reading speed.	27.8	47	72.2	122	
When I read quickly, I lose comprehension.	25.5	43	74.6	126	
I read everything at the same speed.	29.8	50	70.3	119	1
I enjoy reading.	15.9	17	84.1	142	
I don't complete my reading assignments because I read too slowly.	2.4	4	97.7	164	1
Memory					
I remember what I study.	5.3	9	94.7	160	
I can remember what I need to remember.	3.6	6	96.5	162	1
I relate new information to what I already know.	3.6	6	96.4	163	
I review coursework throughout the semester.	50.6	85	49.4	83	1
When I have trouble memorizing, I use memory "tricks".	31.4	53	68.6	116	

Table 3

Replies to the open-ended statement, "The most important study skill that a successful college student needs is:"

Reply	n=	%
Time management	76	45
Reading comprehension	20	12
Lecture notetaking	14	8
No reply	10	6
Concentration	8	5
Motivation	7	4
Discipline	7	4
Organization	5	3
Textbook reading	5	3
Memorization	3	2
Practice	3	2
Reading Speed	3	2
Test-taking	2	1
Confidence	2	1
Patience	2	1
Luck	2	1

taking and vocabulary respectively, one question per skill area exhibited an overwhelming response of 100% non-need. Those items revealed that none of the subjects had difficulty reading examination questions nor did they have difficulty understanding textbook vocabulary.

Interestingly, 52.8% of the subjects surveyed did reveal a need for time management assistance. Forty-five percent of those same students replied that time management was the most important skill necessary to be a successful student. One can speculate as to the successful nature of the subjects and yet their perceived need for time management assistance.

One possibility lies in the notion that perhaps those students are unaware of methods of time management that are currently available (i.e., Pauk, 1984). Along the same dimension, perhaps those students have never been taught how to utilize time effectively and efficiently.

Another consideration could be that on the average these successful students work 17 hours per week. Their perception of the criticalty of the need for time management couldpossibly be impacted by their employment responsibilities. Their responses to the open-ended statement showed high anxiety resulting from the demands on their time imposed by academic and employment responsibilities.

The results also provide for an observation based on the demographic profile of these students. It should be noted that the Honors students must maintain an average of 3.5 in their major area of study, however, in this case the mean overall grade point average was 3.7. These students also work approximately 17 hours per week, yet enroll on the average of 15 credit hours per semester which is above the normal 12 credit hour load taken by W.S.U. students. They have persisted in their academic endeavors as represented by 81% of the subjects being beyond their freshman year and 39% being upperclassmen. Therefore, these students indeed demonstrate characteristics of high academic achievers.

Finally, the Hoyt estimate of reliability reveals a very low magnitude of inconsistency in the total inventory.

Recommendations

In conclusion, the results of this study do support the assumption inherent in the W.S.U. Study Skills Inventory that the majority of successful students practice effective study habits most of the time.

Subsequent research could be conducted to generate a comparison study between college ranks of the subjects. It would be necessary to code Study Skills Inventory replies in conjunction with demographic profile information per each student. The data could be analyzed accordingly to search for significant differences between ranks of students and study habits practiced.

The same research format as the one presented in this study could be utilized with students other than those from the Liberal Arts Honors Program. One could address the question, "Is there more of a need for a particular skill in one discipline than another?" Data collected could provide valuable information regarding study habits and needs of students in varied disciplines such as Engineering, Business, Social Work, etc. A study such as this could be utilized for an assessment of the average University student. More importantly, such pertinent information could provide assistance in the development of particular skills programs related to specific content areas.

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SECONDARY READING
WHAT DO THE TEACHERS THINK?

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ABSTRACT

Effective reading skills are needed by students at all age-grade levels, and especially at the secondary and post secondary phases of their education. A major problem arises from the fact that in the past, relatively few secondary teachers believed that they should teach appropriate reading skills to their teachers. Are these opinions still the same or have secondary teachers' attitudes toward teaching reading skills changed? The purpose of the present study was to answer this and other questions. To this end, secondary teachers in rural areas (N=130), urban areas (N=135), and suburban areas (N=123) were asked to fill out the Vaughan Scale. Data from the scale were compiled, treated, and are reported in this study.

In the past, the ability of individuals to read has been an important factor in their own well being as well as the society in which they live (Stanchfield, 1965). Today this is even more important and steps must be taken to ensure reading skill development (Cushenbury, 1982). However, learning to read and reading to learn are long-term developmental processes reflecting the individual growth pattern/potential of students and cannot be mastered at a specific or pre-determined age/grade level (Early, 1973). Instead, such skills must be taught, learned, nurtured and expanded throughout all levels of education; secondary as well as elementary (Vacca, 1981).

Introduction. As students progress through the grades, they learn to read and read to learn, but they do so with different degrees of proficiency and achievement (Cushenberry, 1982). Moreover, the elementary school phases of reading instruction utilize primarily narrative materials, but in middle schools and high schools, students read expository prose and this is more difficult to comprehend. Consequently, pupils experience problems in reading and learning and their academic performance falters (Roe, et.al., 1983). Large numbers of high school students do not read as well as they could (Lehr, 1981) and upwards of twenty per cent of them require remedial assistance (Roe, et.al., 1983).

Reading instruction is needed in the high school and the disciplines (Greenlaw and Moore, 1982), but secondary teachers usually focus their efforts on teaching the subject and do not teach reading skills (Lehr, 1981). Yet now more than ever, such teaching is imperative (Criscuolo, 1982). Moreover, in addition to poor student academic and reading performance, significant changes in teacher certification requirements are bringing attention to and pressure on secondary reading instruction. Almost half the states in the conterminous United States mandate reading methods courses for all teachers (International Reading Association, 1981).

These realities, poor academic student performance, the need for continued reading instruction at all grade levels and the certification requirements, place the secondary teacher in a difficult position. These educators are faced with the need for teaching their subject, the various reading skills and perhaps, for taking reading courses. Given their previous training/background one wonders how they feel about the situation. There is a need for them to teach higher level reading skills in their subjects, but they may not really believe they should and they may hold these beliefs for many reasons. Their attitudes may reflect personal views of the reading process as well as their own previous experiences. Their professional education is another factor and even the setting or location in which they teach could affect their views. At present, little is known about this last point, the area in which secondary teachers teach. How do teachers in suburban, urban, and rural areas feel about the need for teaching reading skills to their students?

Statement of the Problem.

The purposes of the present study were to (A) discover the current attitudes and opinions of secondary teachers in relation to how they perceived the need for teaching reading skills to their students and (B) to determine if such thinking was delimited by the settings (geographical locations) in which the teachers taught. That is to say, do high school teachers believe that they are responsible for teaching reading skills to their students or do they think it is a waste of time? Does the location of the high school have an effect upon the attitudes/opinions of the teachers? What do secondary teachers believe to be their most important teaching priority in regards to their subjects vis-a-vis appropriate reading skills? Should the English teacher and reading specialist be the only ones who should teach reading skills? Do opinions from teachers in rural areas differ from those in urban/suburban areas? If so, what are these differences? Responses to these and other questions formed the base of the study.

Significance of the Study.

Teachers convey their opinions, preferences, likes and dislikes in many ways. Moreover, students pick up not only the verbal, but the nonverbal messages telegraphed to them (Rieck, 1977). If teachers like or dislike a subject, their students sense this and the message is sent regardless of attempts to disguise or cover up those attitudes. Therefore, knowing how teachers feel about teaching their students appropriate reading skills can lead to strengthening that process wherever needed in the high schools subjects.

Knowledge of teacher attitude toward reading can be used as a base for meaningful inservice programs. Consequently, teachers can learn to provide their students with effective instruction, and generate a truly vital ambience for learning.

Then, in addition to becoming better readers, students will learn much more about the disciplines (Roe, et.al., 1983) and high schools will be more vital learning centers for all concerned (Vacca, 1981).

Review of Related Literature

Interest in the field of reading is continuing to gain momentum among high school teachers here in the United States. Now, more is being written about secondary reading than ever before (Vacca, 1981). Reading, as a process, is enjoying much attention among many subject matter specialists because so few of their students read well. (Roe, et.al., 1983)

The available literature contains an abundance of reading research studies in the secondary level, but only a few measure secondary teacher's attitudes/opinions about the need for teaching reading skills to high school students. Few of the attitude studies compare the location of the high school (rural setting, urban, or suburban) and teachers' views of reading.

Previous research has tended to focus on emphasizing reading awareness among high school teachers (Criscuolo, 1982). Many of these studies were involved with in-service programs which were carried out in order to explain some reading techniques that teachers could use (Criscuolo, et.al., 1980). Other foci or areas of emphasis were concerned with secondary remedial reading programs (Lehr, 1981), and the role of the high school reading specialist (Stauchfield, 1965) or special programs (Cushenbery, 1982).

Some attitude studies about secondary reading have focused on the preservice reading course. Many college/university students question the need for and resent having to take a reading methods course (Hoover, 1980). Yet, such attitudes can change. This was reported by Wells (1981) in her three year investigation about the effects of a reading methods course. She used the Vaughan (1977) Scale and compared pre/post course responses. After the sixteen week methods course, her students indicated a positive view on the need for teaching reading skills.

O'Rourk (1980) used the Vaughan Scale to sample the opinions of 480 teachers in junior and senior high schools. He concluded that English teachers are most likely to teach reading skills, but teachers of other subjects are not. Moreover, he found that those teachers who took a reading methods course had significantly higher (more positive) opinions about the need for teaching students appropriate reading skills than did their colleagues.

Usova (1978) reported the use of a 20 item Likert scale to measure the attitudes of secondary teachers in 256 secondary districts in Pennsylvania. The questionnaire was given to specific subject matter teachers in the various high schools. After the data were analyzed, Usova concluded that there are significant differences in attitude toward reading instruction among English, history, science, and mathematics teachers. The combined opinions of history and English teachers were significantly more favorable toward reading than those of math teachers.

Dupuis, et.al., (1979) measured attitudes of teachers in rural, urban, and suburban areas, but the thrust of the study was to increase teacher competency in reading. This was carried out by using a model inservice program in content area reading. At the outset, it was assumed that secondary teachers (1) had little or no knowledge of how to teach reading skills and (2) viewed the teaching of reading in a negative fashion. So, the primary goal was to change teacher's attitudes toward reading, without really knowing the nature of them. A workshop format was used to teach reading skills and attitude change. The results of the study showed that teachers in the workshop made a significantly greater positive attitude change than did control group teachers. They demonstrated a significantly greater knowledge of reading skills as well as an ability to teach them.

Lloyd (1984) conducted a pilot study using the Vaughan Scale and sampled the opinions of three small groups of educators. These were teachers in (1) a community college, (2) an urban high school, and (3) a graduate reading methods class for secondary teachers. After comparing questionnaire responses, he concluded that (1)most of the participating teachers believe that they should preteach the pertinent vocabulary of a reading assignment and (2) should show their students that they, themselves, enjoy reading. Moreover, the data show that these teachers believed they should help their students think at higher cognitive levels and assist them in setting purposes for reading.

From the available research regarding secondary teachers' opinions about the need for teaching reading skills it is possible to draw several conclusions. For example, it does appear to be true that secondary level reading methods courses do have a positive effect on the attitudes of those who take the course (Dupuis, et.al., 1979; Welle, 1981). Some teachers, such as those who teach English, are more aware of the need for teaching reading skills to their students, but many are not (Braam and Walker, 1973; Criscuolo, 1982; Greenlaw and Moore, 1982; O'Rourk, 1980; Otto, 1969; Roe, et.al., 1983; and Vaughan, 1977). Yet there are no reported studies of teacher attitudes/opinions vis-a-vis high school location or setting. So a major informational gap exists at this time. As a result, the question (O'Rourke, 1980) remains unanswered: how do content (secondary) teachers feel about the need for teaching reading skills to their students and do their opinions/attitudes differ according to the location (rural, urban, suburban) of the school? The present study was carried out to discover the answer to this question.

DESIGN OF THE STUDY

In order to discover the attitudes of secondary teachers as to their opinions about the need for teaching reading skills to their students, a questionnaire was used. The data gathering instrument has been validated (Vaughan, 1977) and used with success in other investigations (Lloyd, 1984). For the present study, the researcher traveled to several high schools and administered the questionnaire on an informal basis. Teachers were not required to respond if they chose not to do so. Subsequently, the devices were collected and coded so that the name of the high school was protected. Thereafter, data were tabulated and treated. The results appear in the next chapter.

Instrumentation. The questionnaire that was used as the information gathering instrument was developed originally by Vaughn (1977). In it there are fifteen questions to which teachers responded on a Likert-type scale. The values ranged from 0 (strongly disagree) to 10 (strongly agree) with a mid-point of 5 which represented no opinion one way or the other. (See Table one.)

Vaughan has indicated that his questionnaire does have construct validity. It is a reliable and valid measure of teacher attitude. He reports a coefficient of internal consistency for the total scale as .87 (Cronbach's Alpha) and the median stability coefficient was .77 as measured by the Pearson product - moment correlation. These data support the high reliability of the instrument. Further statistical treatment revealed construct validity as well (Vaughan, 1977).

Table One

Teaching Reading Opinion Survey

It is important for you to express your opinion about the concepts noted in the questions/ statements that follow. Your responses can be guides to future goals in secondary education and reading instruction.

Kindly use the following scale rangng from 0 (complete disagreement) to 10 (complete agreement). The mid-point of 5 means no opinion. If you strongly agree, mark the appropriate number (6-10) or disagree (mark 0-4) and if you are undecided, mark 5.

	0	1	2	3	4	5	6	7	8	9	10
1. A content area teacher is obliged to help students improve their reading ability.											
2. Technical vocabulary should be introduced to students in content classes before they meet those terms in a reading passage.											
3. The primary responsibility of a content teacher should be to impart subject matter knowledge.											
4. Few students can learn all they need to know about how to read in six years of schooling.											
5. The sole responsibility for teaching students how to study should lie with reading teachers.											
6. Knowing how to teach reading in content areas should be required for secondary teaching certification.											
7. Only English teachers should be responsible for teaching reading in secondary schools.											
8. A teacher who wants to improve students' interest in reading should show them that he or she likes to read.											
9. Content teachers should teach content and leave reading instruction to reading teachers.											
10. A content area teacher should be responsible for helping students think on an interpretive level as well as a literal level when they read.											
11. Content area teachers should feel a greater responsibility to the content they teach than to any reading instruction they may be able to provide.											

12. Content area teachers should help students learn to set purposes for reading.
13. Every content area teacher should teach students how to read material in his or her content specialty.
14. Reading instruction in secondary schools is a waste of time.
15. Content area teachers should be familiar with theoretical concepts of the reading process.

0	1	2	3	4	5	6	7	8	9	10

Have you taken a reading methods course? ______________

What is your major field of preparation? ______________________________

____

What subject(s) dor you teach? ______________________________________

____

This questionnaire has been adapted from: Vaughan, Joseph L., "A scale to Measure Attitudes toward teaching reading in content classrooms." Journal of Reading, 20: 605-609, April 1977

The questionnaire used in the present study is an adaptation of the Vaughan Scale. The changes that were made came from the results of a pilot study that was carried out to determine in part, ease of administration and data interpretation (Lloyd, 1984). The rating scale (1-10) was changed to (0-10) so that there would be an exact mid-point (5) representing no opinion (undecided). Moreover, three additional questions were included in order to gather other pertinent information:

Have you taken a reading methods course?
What is your major field of preparation?
What subject(s) do you (presently) teach?

Procedures. Data were gathered during the winter semester (January - April, 1984) because there would be few, if any, interruptions in the school instructional program. No major holidays would interfere with the investigation.

Fifteen high schools from the southwestern geographical region of Michigan were involved in the project. There were six rural schools (N=130) three urban schools (N=135); and six suburban schools (N=123), participating in it. The geographical area measured from Lansing south to the border and west to Muskegon. The researchers initially contacted school superintendents and principals and explained about the nature of the investigation. Then dates/times were agreed on for visiting the schools and administering the questionnaires. The researchers traveled to the schools, met with administrators and faculty, and administered the instrument as arranged. Teachers were assured that they were not required to participate if they so chose. Annonymity was assured and no high school or faculty would be named in the final report.

Data were collected accordingly, tabulated, and treated. This phase of the study is discussed in the following chapter.

TREATMENT OF THE DATA AND FINDINGS

Data from fifteen high schools and three hundred eighty-eight teachers were gathered as previously described. They were then treated to determine means and standard deviations. Subsequently, the data were tabulated by area (rural - urban - suburban) and then graphed by area and school (R-1, R-2; U-1, U-2, etc.) Responses to each of the fifteen questions appear on the following pages.

The Tables. In order to properly report the findings, questionnaire statements were coded as follows:

1. COTE - A content area teacher is obliged to help students improve their reading ability.
2. TEVO - Technical vocabulary should be introduced to students in content classes before they meet those terms in a reading passage.
3. PRIM - The primary responsibility of a content teacher should be to impart subject matter knowledge.
4. SIXX - Few students can learn all they need to know about how to read in six years of schooling.
5. SOLR - The sole responsibility for teaching students how to study should lie with reading teachers.
6. CERT - Knowing how to teach reading in content areas should be required for secondary teaching certification.
7. ENGL - Only English teachers should be responsible for teaching reading in secondary schools.
8. LIKE - A teacher who wants to improve students' interest in reading should show them that he or she likes to read.
9. CONT - Content teachers should teach content and leave reading instruction to reading teachers.
10. THIN - A content area teacher should be

responsible for helping students think on an interpretive level as well as a literal level when they read.

11. INST - Content area teachers should feel a greater responsibility to the content they teach then to any reading instruction they may be able to provide.
12. PURP - Content area teachers should help students learn to set purposes for reading
13. SPEC - Every content area teacher should teach students how to read material in his or her content specialty.
14. TIME - Reading instruction in secondary schools is a waste of time.
15. THEO - Content area teachers should be familiar with theoretical concepts of the reading process.

It will be noted that selected questionnaire statements are marked (*). This indicates that the responses should be interpreted as pro reading (Vaughan, 1977). That is to say, if, for example, teachers read statement 3, "The primary responsibility of a content teacher should be to impart subject matter knowledge," and mark in the 0 or 1 box, the interpretation should be strongly in favor of reading because it would seem to indicate that content teachers have more to do than teach their subject (Vaughan, 1977).

On the following pages data are reported for each area and each participating school. Table I shows the responses for the rural high schools and lists means/standard deviations for each statement and school. Table II contains the findings from the urban high schools and Table III contains information from the high school in the suburban settings.

The Graphs. It is readily apparent that the tables may be difficult to interpret, so the data have been charted in graph format on the following pages. Then, a composit graph is proffered showing all three groups.

It will be noted that, on the graphs, the

TABLE 2

MEANS AND STANDARD DEVIATIONS OF SURVEY RESPONSES FROM TEACHERS IN RURAL HIGH SCHOOL AREAS

	R-1 (N=21) M SD	R-2 (N=42) M SD	R-3 (N=16) M SD	R-4 (N=16) M SD	R-5 (N=26) M SD	R-6 (N=9) M SD	M (N=130) M SD
1. COTE	7.33--1.88	6.13--3.21	7.47--2.47	6.20--2.43	6.04--3.04	6.63--3.07	6.63--2.68
2. TEVO	7.78--1.90	7.21--3.25	7.33--1.88	7.87--1.88	7.71--2.37	8.00--2.98	7.65--2.38
*3. PRIM	8.94--1.06	7.32--2.75	7.40--2.95	7.20--2.54	6.63--3.56	6.50--4.00	7.33--2.81
4. SIXX	6.33--3.36	5.79--3.53	6.33--2.92	6.73--2.94	5.50--3.09	5.63--3.62	6.05--3.38
*5. SOLR	2.28--2.37	2.47--3.24	0.60--0.83	1.87--2.14	1.96--2.20	2.25--1.91	1.91--2.12
6. CERT	4.44--2.38	5.84--2.86	5.87--3.42	5.73--2.96	5.04--3.61	6.00--4.11	5.49--3.22
7. ENGL	3.50--2.75	3.66--3.61	3.07--3.06	2.40--2.47	2.71--3.06	4.13--3.76	3.25--3.12
8. LIKE	7.89--1.81	7.34--2.53	8.20--2.01	7.60--1.76	6.92--3.30	6.63--2.07	7.43--1.19
*9. CONT	3.17--2.46	3.95--3.56	1.67--2.64	3.00--2.95	2.96--3.20	3.88--3.76	3.11--3.10
10. THIN	7.44--1.76	8.21--2.41	9.00--1.13	8.27--1.83	8.38--1.69	7.63--1.51	8.16--1.72
*11. INST	6.06--2.60	6.79--2.52	6.13--2.10	6.93--1.79	6.46--2.96	7.13--2.23	6.58--2.37
12. PURP	7.06--2.31	6.92--2.62	7.40--2.13	6.60--2.53	7.83--1.93	6.75--3.15	7.09--2.45
13. SPEC	6.67--2.22	7.63--2.35	7.93--1.71	7.00--2.04	7.46--2.52	6.50--3.21	7.20--2.34
*14. TIME	1.11--1.29	2.47--2.82	0.60--1.40	0.33--0.62	1.54--2.50	1.75--3.41	1.30--2.01
15. THEO	5.56--2.25	5.95--2.44	6.80--2.65	6.27--2.74	5.42--3.11	6.50--3.30	6.08--2.75

TABLE 3

MEANS AND STANDARD DEVIATIONS OF SURVEY RESPONSES FROM TEACHERS IN URBAN HIGH SCHOOL AREAS

	U-1 (N=69) M SD	U-2 (N=51) M SD	U-3 (N=15) M SD	M (N=135) M SD
1. COTE	7.46--2.93	5.02--3.76	5.00--4.11	5.83--3.60
2. TEVO	7.46--2.93	6.44--3.74	5.30--3.89	6.40--3.52
*3. PRIM	5.82--4.01	6.05--4.06	5.30--4.27	5.72--4.11
4. SIXX	4.75--4.08	4.90--3.97	2.20--4.13	3.95--4.06
*5. SOLR	1.57--2.46	1.29--2.22	1.70--3.20	1.52--2.63
6. CERT	4.82--3.45	4.20--3.61	4.30--3.37	4.44--3.48
7. ENGL	2.77--3.10	1.98--2.54	2.30--3.20	2.35--2.95
8. LIKE	7.84--2.34	7.44--3.10	5.60--4.03	6.96--3.16
*9. CONT	2.93--2.93	3.02--3.28	2.60--3.03	2.85--3.08
10. THIN	8.09--2.65	7.24--3.18	7.10--2.96	7.48--2.93
*11. INST	5.82--3.14	6.95--2.93	6.70--3.16	6.49--3.08
12. PURP	6.80--3.04	6.71--2.99	5.00--3.06	6.17--3.03
13. SPEC	6.73--3.14	7.02--3.49	4.30--3.62	6.02--3.42
*14. TIME	1.59--2.64	1.12--2.05	0.20--0.63	0.97--1.77
15. THEO	6.54--2.86	5.95--3.05	4.60--3.34	5.70--3.08

TABLE 4

MEANS AND STANDARD DEVIATIONS OF SURVEY RESPONSES FROM TEACHERS IN SUBURBAN HIGH SCHOOL AREAS

	S-1 (N=17) M SD	S-2 (N=37) M SD	S-3 (N=22) M SD	S-4 (N=29) M SD	S-5 (N=7) M SD	S-6 (N=11) M SD	M (N=123) M SD
1. COTE	5.22--3.99	4.33--3.62	5.81--3.06	4.46--3.24	5.80--1.10	5.00--4.55	5.10--3.26
2. TEVO	3.67--3.54	3.79--4.24	5.69--3.63	6.92--2.99	5.80--4.21	4.50--4.33	5.06--3.82
*3. PRIN	2.44--3.71	5.29--4.11	6.81--2.88	7.33--3.57	3.00--4.12	5.10--3.93	4.89--3.72
4. SIXX	2.44--3.50	2.83--3.96	4.81--3.87	5.71--3.74	2.80--2.95	4.20--4.24	3.80--3.64
*5. SOLR	1.44--1.88	0.83--2.10	1.38--1.59	1.96--2.03	3.00--3.74	1.50--2.22	1.69--2.26
6. CERT	5.89--1.69	4.71--3.62	4.69--2.85	3.60--2.99	5.80--3.63	4.80--4.10	4.90--3.18
7. ENRL	1.56--2.35	2.71--3.45	2.25--1.95	2.94--2.46	2.20--1.48	0.90--1.60	2.03--2.22
8. LIKE	3.00--4.30	6.58--3.80	6.75--3.91	6.88--2.27	8.20--1.64	8.00--2.67	6.61--3.11
*9. CONT	4.00--2.65	2.42--3.36	2.06--2.21	2.48--2.62	2.20--2.28	1.90--3.04	2.51--2.69
10. THIN	3.78--3.90	6.50--4.21	6.69--3.54	7.00--3.08	8.60--0.89	7.40--4.03	6.06--3.28
*11. INST	6.00--3.12	6.21--3.18	5.31--3.06	6.96--2.51	6.20--3.19	5.40--3.53	6.01--3.10
12. PURP	6.22--3.53	7.00--3.41	6.19--2.61	6.38--2.67	5.60--3129	7.90--2.18	6.55--2.95
13. SPEC	5.00--3.77	6.13--3.70	6.31--3.63	6.17--2.94	7.40--0.55	6.80--4.34	6.30--3.16
*14. TIME	0.80--1.36	0.63--1.35	0.19--0.40	1.29--2.44	0.20--0.45	1.80--3.62	0.83--1.60
15. THEO	6.44--3.13	5.96--2.49	6.44--3.53	5.92--2.48	6.80--1.64	6.80--2.78	6.23--2.68

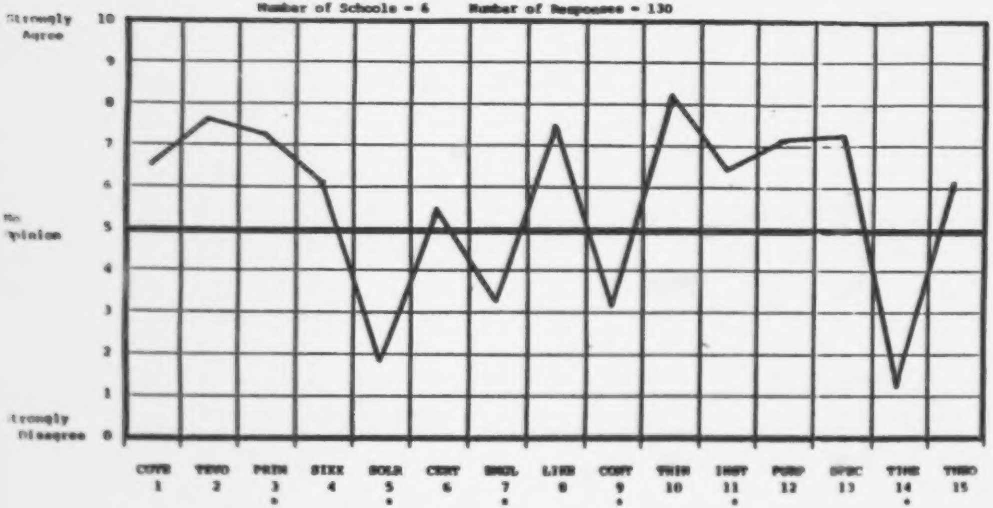
Graph I

SECONDARY READING: WHAT DO THE TEACHERS THINK?

High school area Rural ** Urban ____ Suburban ____

RURAL TOTAL

Number of Schools = 6 Number of Responses = 130



* -- negative response is positive

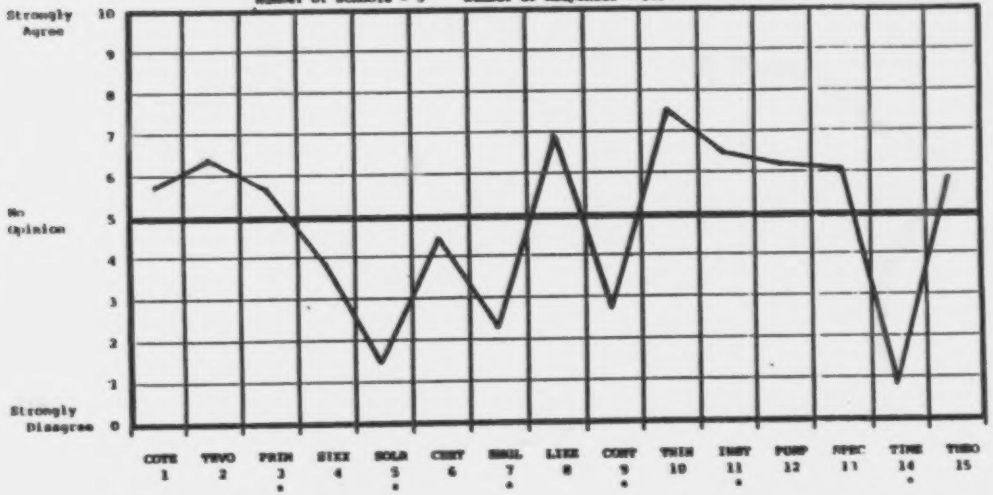
Have you taken a reading methods course Yes 44 No 83

Graph II
SECONDARY READING: WHAT DO THE TEACHERS THINK?

High school area Rural ____ Urban **____ Suburban ____

URBAN TOTAL

Number of Schools = 3 Number of Responses = 135



* -- negative response is positive

Have you taken a reading methods course Yes 50 No 83

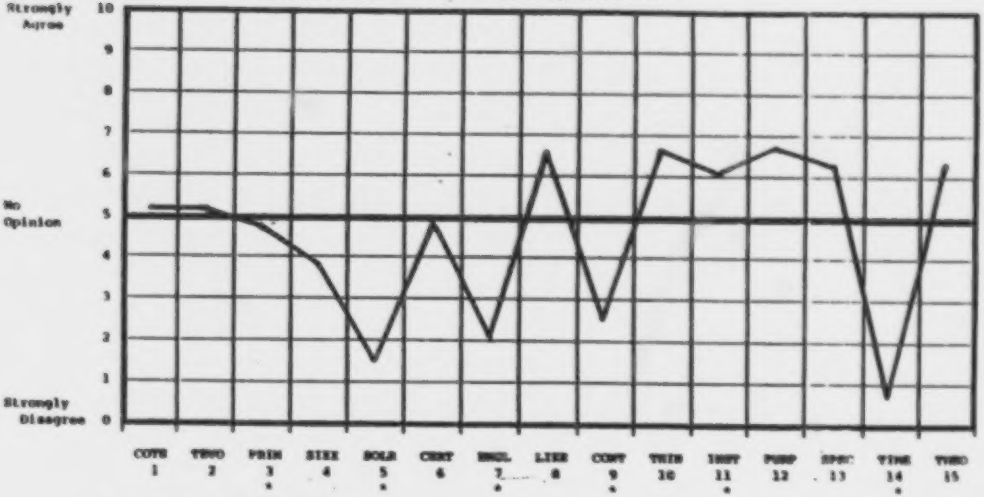
Graph III

SECONDARY READING: WHAT DO THE TEACHERS THINK?

High school area Rural ____ Urban ____ Suburban ** ____

SUBURBAN TOTALS

Number of Schools = 6 Number of Responses = 123



* -- negative response is positive

Have you taken a reading methods course Yes 31 No 87

Graph IV

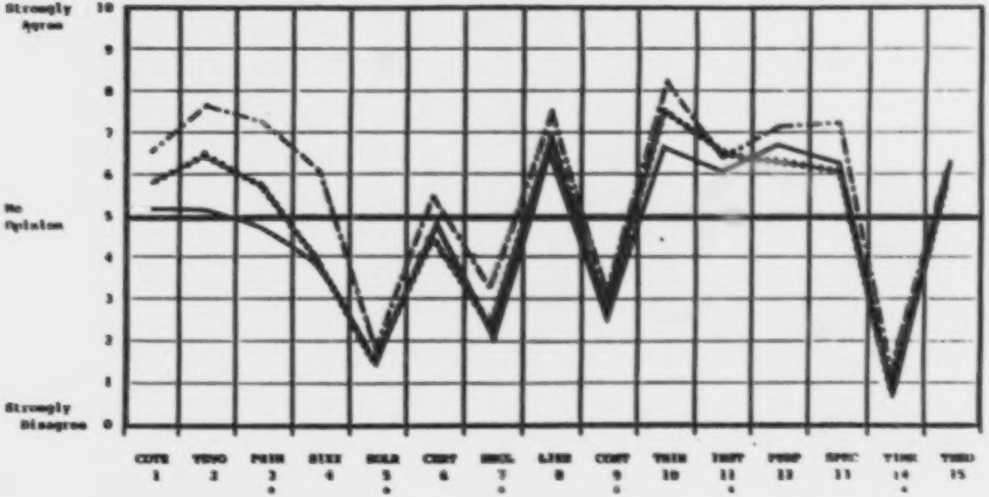
SECONDARY READING: WHAT DO THE TEACHERS THINK?

High school area Rural —·— Urban ●●●●● Suburban ———

RURAL TOTAL Number of Schools = 6 Number of Responses = 130

URBAN TOTAL Number of Schools = 3 Number of Responses = 135

SUBURBAN TOTALS Number of Schools = 6 Number of Responses = 113



* -- negative response is positive

Have you taken a reading methods course Yes 125 No 253

number five (5) means no opinion and is easily discerned by the heavy black line. Zero (0) indicates strong disagreement and ten (10) indicates strong agreement. In order to avoid the possibility of placing too much emphasis on the fine differences between numbers it was decided to group them as follows: scores between four (4) and six (6) would indicate no opinion. Scores between two (2) and four (4) meant some disagreement and those between six (6) and eight (8) meant some agreement. Scores between zero (0) and two (2) presented strong disagreement and those between eight (8) and ten represented strong agreement.

Discussion. The Vaughan Survey (as amended) revealed information about secondary teacher attitude toward the need for teaching reading skills to students. Opinions and feelings ranged widely on some statements yet revealed significant consistency on others. Overall, there seems to be more agreement among the teachers than disagreement the only difference is in degree or intensity.

The pattern of agreement among the participating teachers is consistent in the following questionnaire statements:

*5. (SOLR) The sole responsibility for teaching students how to study should lie with reading teachers.

All three groups strongly disagreed with this statement.

6. (CERT) Knowing how to teach reading in content areas should be required for secondary teaching certification.

There was no opinion on this statement.

*7. (ENGL) Only English teachers should be responsible for teaching reading in secondary schools.

Teachers disagreed with this statement.

8. (LIKE) A teacher who wants to improve students; interest in reading should show them that he or she likes to read.

Teachers agreed with this point (mild agreement)

*9. (CONT) Content teachers should teach content and leave reading instruction to reading teachers.

Teachers disagreed with this statement (mild disagreement)

*11. (INST) Content area teachers should feel a greater responsibility to the content they teach than to any reading instruction they may be able to provide.

There was mild agreement on this point.

*14. (TIME) Reading instruction in secondary schools is a waste of time.

Not only did most teachers concur with this statement, but they also indicated strong disagreement with the idea.

15. (THEO) Content area teachers should be familiar with (the) theoretical concepts of the reading process.

Teachers had no opinion on this point and, again, their responses were consistent in all three groups.

Of the fifteen statements in the Vaughan Survey, participants were in closest agreement with #14 (TIME). They indicated strong disagreement about secondary reading instruction being a waste of time. They also disagreed strongly with #5 (SOLR) that only reading teachers should teach students study skills.

In teacher preparation it is noted that for rural teachers 44 had a reading course, but 33 did not. The urban group fared better because 50 had such a course, while 83 did not. In the suburban areas 31 had taken a reading methods course but 87 had not.

For professional assignments, 114 rural teachers were teaching in their chosen field. Twelve were not. In the urban areas 124 teachers were in their fields — 7 were not. And in the suburban areas 110 were in their fields — 8 were not.

Conclusions. From the data proffered, it would seem that the following conclusions are warranted:

1. Most high school teachers strongly agree that teaching reading skills to students is not a waste of time.
2. They are also in strong agreement that the reading teacher is not the only one who should teach students how to study.
3. Secondary teachers believe that they should teach their students how to think on an interpretive as well as literal level.
4. They also believe that they should show students that they, themselves, enjoy reading.

In addition to these conclusions, the Vaughan Scale (as revised) indicated that about half of the participating teachers had taken a reading methods course. However, for the questions, "Knowing how to teach reading in content areas should be required for secondary teaching certification" (6-CERT), responses clustered around number 5 (no opinion).

In general, it would seem that secondary teachers are consistent in their responses to most of the questions on the Vaughan Scale. There are variations between rural, urban and suburban groups on their obligation to help students improve reading ability (COTE), on teaching technical vocabulary (TEVO), their primary responsibility in teaching subject matter (PRIM), and whether or not students can learn to read in six years (SIXX). But in the remaining areas questioned, there was close agreement. So it would appear that the location of the school, rural-urban-suburban, has little impact on teacher opinions about teaching reading skills.

Recommendations for Further Study. Data from the Vaughan Scale indicate teacher opinions regarding the need for teaching reading skills to students. Whatever the responses are, there is no guarantee that these opinions will manifest themselves in classroom teacher action or behavior. Teachers will have beliefs of one sort or another and may choose to do something or nothing for any number of reasons.

Now that teacher attitudes about teaching reading skills to their students have been ascertained, it is necessary to move on to another important phase of secondary education. It is imperative that teacher knowledge of reading skills be determined. That is to say, teacher awareness of the reading skills needed by students at the secondary level should be uncovered. Do high school teachers know the nature of the reading skills needed by their students? If they do, are appropriate reading skills taught? If not, what is done in the classroom?

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HIGH SCHOOL TEACHERS' AWARENESS OF READING SKILLS

A PILOT STUDY

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ABSTRACT

Reading must be taught, learned and nurtured continuously throughout all educational levels. Unfortunately, many secondary level learners do not receive such continuous instruction. This paper considers causes for poor reading performance and comments on research literature on secondary reading. Lloyd discusses the findings of a survey of content area teacher's awareness of the reading skills of their students. An analysis of responses to the questionaire provides interesting insights into the problems facing secondary reading today.

Reading to obtain meaning from print material is a process by which learners of all ages gain knowledge/information and it is something to enjoy as a leisure-time activity (Forgan and Mangrum, 1981). Moreover, the ability of individuals to read has been and remains an important part of their own well-being and the society in which they live (Stanchfield, 1965; Greenlaw and Moore, 1982). Yet reading is a long-term development process that cannot be mastered at a specific age/grade level or date (Early, 1973). It must be taught, learned, and nurtured continuously throughout all educational levels, grades 1-12 (Vacca, 1981).

Introduction. Far too many individuals in our society do not like to read (Lehr, 1981). Once students leave high school, they rarely read to gain information or read as a leisure time activity (Shepherd, 1982). Many learners, especially in secondary schools, do not read to gain an adequate knowledge of their subjects and their classroom performance remains uninspired at best. They are the ones who suffer the consequences, yet are largely unaware of what they are missing (Roe, et al., 1983). Moreover, they are graduating from high school, entering society and are expected to contribute to it, but these individuals are underprepared for that responsibility. The situation is critical and needs to be corrected (Siedow, et al., 1985).

The reasons for poor student reading/classroom performance are better known now than they were a few years ago. In general, they focus on (1) changes in the style of reading material from elementary school narrative to high school expository prose and (2) teachers' failure to teach the reading skills appropriate to their subject(s) (Criscuolo, 1982). Moreover, the reading process as taught in the elementary grades has tended to be a boring, workbook oriented chore (Greenlaw and Moore, 1982) that has caused students to dislike and turn away from reading (O'Rourke, 1980). Reading skill instruction in high schools was largely non-existent and, at best, sporatic (Vacca, 1981).

Fortunately, for secondary students and society, the reading instructional scene is changing. In many states, teachers are required to take a reading methods course for certification. Also, throughout the country, there is a new emphasis on the high school teacher's responsibility for improving reading instruction (Cushenbury, 1982). But legislation and e'lan have their limitations. Making it mandatory to take a reading methods class and realizing that it is necessary to teach reading skills in secondary subjects are no guarantees that such skills will be taught (Siedow, et al., 1985). So an interim step is necessary and that is to determine secondary teachers' present knowledge of the reading skills needed by their students. This information can provide direction for appropriate inservice programs as well as changed classroom practices that lead to improved student reading and learning (Braam and Walker, 1973).

Review of Related Literature. The literature relating to this special topic is sparse and dated.

Much of it focuses on elementary teachers and what little there is at the secondary level concerns itself with teacher evaluation of reading skills already described for them. The initial study (Braam and Roehm, 1964) concluded that the high school teachers sampled were largely unaware of the reading skills needed by their students. In a later replication (Braam and Walker, 1973) similar conclusions were drawn and it was noted that the high school reading specialists were more aware of reading skills than were the content teachers.

In general, secondary research studies tend to focus on emphasizing reading awareness among high school teachers (Criscuolo, 1982) and inservice programs that are designed to explain the reading techniques teachers can use (Criscuolo, et al., 1980). Other areas of emphasis are on secondary remedial reading programs (Lehr, 1981) and special reading programs (Cushenbery, 1982).

One recent study investigated the accuracy of content teachers' judgements about the reading abilities of secondary students and explored the relationship between the types of information that content teachers use for making their judgements. Participants included 31 English and 22 social studies teachers. The factors noted were oral reading, study skills, vocabulary knowledge, comprehension skills, and physical/attitudinal elements. No significant relationships were found between types of information and judgments of reading abilities (Frager, 1984). Moreover, teachers were not asked to note reading skills, but had them presented as criterion reference factors.

Stevens (1978) investigated the accuracy of teacher judgment by comparing 30 teachers' diagnoses of an eight-year-old student's reading abilities to a criterion diagnosis developed by a group of four expert diagnosticians. An average of thirty percent of the individual teachers' diagnostic statements agreed with the criterion diagnosis. However, this was at the elementary level and the reading skills noted were at the beginning reading level where oral reading is stressed.

In their investigation of the role of reading instruction in secondary content classrooms, Smith and Feathers (1983) compared teacher stated goals/practices with student perception of those elements. Goals were stated broadly (...want students to love the subject) and no reading skills were listed. Interestingly enough, the students perceived their teachers wanting them to obtain the facts from reading assignments. (Obtaining facts is an important reading skill.)

The dearth of literature regarding the specific topic of the present proposal is significant because one can conclude that other researchers have not yet conducted and reported such studies. Moreover, discovering current teacher knowledge of reading skills is a step that follows attitudinal investigations so it would seem that the time has come for conducting such research. The information generated can be of great value. When teacher knowledge of reading skills is discovered, areas of insufficiency can be made known and corrected accordingly through inservice programs.

Design of the Study. Students enrolled in a graduate level secondary reading methods class comprised the sample population. The Braam and Walker Survey on the following page was administered immediately at the start of the first session. Sampling was carried out in the fall and winter semesters as well as the spring and summer sessions. This procedure generated seventy-six usable survey responses.

Graduate students were selected because of their experience and knowledge about teaching high school subjects. These teachers were in the best position to respond to the survey and to help determine if the instrument needed further refinement. Walker has noted that there was some difficulty in the interpretation of responses in their study (Braam and Walker, 1973). Should similar problems arise in the present study, this would indicate that the survey should be revamped accordingly. As it turned out, the instrument should

Bruce A. Lloyd

Secondary Teachers' Survey
of
Student Reading Skills *

Secondary teachers' opinions about their students' reading skills are of vital importance for those planning appropriate changes in undergraduate and graduate teacher education programs. Do not sign this questionnaire, but do respond as openly as you can. Your opinion as a secondary teacher is important.

What subject(s) do you teach?

1. Which specific reading skills do you consider as most necessary for your students in order for them to read the materials used in your subject area?

2. Which reading skills are your students best able to apply to the reading material in your subject area(s)?

3. Note the reading skills in which your students are most deficient.

For the following questions, please mark YES or NO as warranted:

A. Have you received instruction in the teaching of reading in your undergraduate college courses? Yes - No
B. Have you received such instruction in your graduate courses? Yes - No
C. Has such instruction been part of inservice training programs? Yes - No
D. Is there a reading program in your high school now? Yes - No
E. Is there a reading specialist in your high school? Yes - No
F. Is there a reading teacher in your high school? Yes - No

Bruce A. Lloyd

Comments: Please add observations and/or ideas that will help strengthen secondary education.

*This questionnaire was adapted from Leonard S. Braam and James E. Walker, "Subject Teachers' Awareness of Reading Skills, "Journal of Reading" 16:608-611, May, 1973.

be changed and revalidated.

These teachers represented a cross-section of the total teacher population in that they taught in all geographic/social locations, rural, urban, suburban. They are subject matter specialists, teaching in a wide variety of disciplines and have had at least several years of teaching experience. However, respondents were a "captive sample" and a select population because they are enrolled in the graduate class. Because they were not selected at random their responses must be interpreted accordingly.

Treatment of the Data and Findings. Responses were tabulated/recorded for each question on the survey. A start was made with the opening question, "What subject(s) do you teach?" Table 1 contains the frequency of responses from the participants. It will be noted that 22 teachers (29 per cent) were in the field of English (speech, drama, literature, grammar, writing, etc.).

Table I
Subjects Taught by Sample Population

English including speech, literature, grammar and writing	22%
Mathematics	10%
Social studies, history, etc.	9%
Science, Chemistry, biology, etc.	7%
Reading, developmental, adult, disabled, etc.	6%
Special education	3%
Business	3%
Art	2%
French	2%
Spanish	1%
Merchandising	1%
Computer science	1%
Library science	1%
Shop	1%
Music	1%
No response	6%

There were ten mathematics teachers (13 per cent), nine social studies (history, geography, etc.) teachers (12 per cent), and so on.

The responses for question 1, "What specific reading skills do you consider most necessary for your students in order for them to read the materials used in your subject area?" are presented in Table 2. The skill of comprehension was the overwhelming first choice (57 per cent). Next in order was vocabulary knowledge (33 per cent) followed by word analysis skills (phonics, roots/affixes, etc.) at 25 per cent. Thereafter, specific reading skills are mentioned and it will be noted that most of them relate to comprehension.

Question 2 asked, "Which reading skills are your students best able to apply to the reading material in your subject area(s)?" These responses are presented in Table 3. It is of interest to note that 28 teachers (37 per cent) did not reply to this question. The reason may be that they simply do not know (this is what one teacher wrote). Thirteen teachers (15 per cent) believed that their students were able to read and comprehend as a best skill. Ten teachers (13 per cent) believed that vocabulary was the best skill and 9 teachers (12 per cent) wrote that reading for specific information was their students major strength.

In question 3, "Note the reading skills in which your students are most deficient," 31 teachers (41 per cent) wrote comprehension. These replies are presented in Table 4. Nineteen (25 per cent) wrote vocabulary and 15 (20 per cent) wrote word analysis skills. Moreover, 16 teachers (21 per cent) did not respond.

Table II

Reading Skills Considered to be Most Necessary

Comprehension	43%
Vocabulary development	25%
Word analysis skills	19%
Main idea	7%
Summarizing/conclusions	6%
Interpretation	5%
Study skills	5%
Details	5%
Application	4%
Following directions	4%
Speed	4%
Critical reading	3%
Sequence	3%
Dictionary	3%
Context clues	2%
Retention	2%
Listening	1%
Referencing	1%
Motives	1%
Prediction	1%
Oral reading	1%
No response	7%

Table III

Skills Students Are Best Able to Apply

Reading for specific information (literal, facts)	9%
Word recognition skills	7%
Comprehending better	13%
Use of vocabulary (vocab. dev.)	10%
Scanning/skimming	6%
Critical reading	1%
Inferences	1%
Retention - recall	3%
Pronouncing words (oral reading)	2%
Reference skills (dictionary, etc.)	2%
Summarizing	1%
Dictionary usage	1%
Directions	1%
No response	28%

Table IV

Skills in Which Students are Most Deficient

Comprehension	31%
Inference	8%
Sequential order	3%
Vocabulary	19%
Word analysis	15%
Context clues	3%
Interpretation	6%
Key word recognition	1%
Study skills	1%
Speed	3%
Details	2%
Listening	3%
Dictionary	2%
Main ideas	4%
Application	1%
Directions	3%
Retention	2%
Conclusions	2%
No interest	1%
Study skills	1%
No response	16%

In the last part of the survey, teachers were asked to mark Yes or No for six questions. Their responses follow:

A. Have you received instruction in the teaching of reading in your undergraduate college courses?	Yes = 27 No = 48 *NR = 1
B. Have you received such instruction in your graduate classes?	Yes = 24 No = 52
C. Has such instruction been part of inservice training programs?	Yes = 15 No = 57 NR = 4
D. Is there a reading program in your high school now?	Yes = 37 No = 27 NR = 12
E. Is there a reading specialist in your high school?	Yes = 21 No = 43 NR = 12
F. Is there a reading teacher in your high school?	Yes = 36 No = 29 NR = 11

* - No Response

Summary and Conclusions. A wide range of disciplines is represented in this sample. The largest number were in the field of English (N=22), ten taught mathematics, nine taught social studies and so on. The respondents believed that the skill of comprehension was the most important one for their students. Vocabulary was the second choice and word analysis ranked third. Thirty-seven per cent of the teachers did not know which reading skills their students were best able to apply in their courses. Fifteen per cent believed that comprehension was the best skill students had. Thirteen per cent thought it was vocabulary and 12 per cent believed it to be reading for specific information. The greatest student reading deficiency was comprehension, then came vocabulary, and the third was word analysis. Twenty-one per cent of the teachers did not respond to this item.

Responses to the survey show that the teachers in the sample believed comprehension was most necessary for their students to succeed in their courses and it was also the skill in which students were most deficient. Next was vocabulary and the third was word analysis. It would appear that the reading skills most needed by students are those in which they are most deficient.

It is noteworthy that most of the teachers did not take an undergraduate reading course and most had not taken a graduate reading methods course. Moreover, reading instruction has not been a part of their inservice programs. From this, one can conclude that these teachers, as subject matter specialists, have had little formal training in the teaching of reading skills as a process for student subject matter mastery.

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WHAT DOES THE RESEARCH LITERATURE SAY ABOUT ACTIVE READERS?

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ABSTRACT

This paper attempts to identify significant characteristics of the active reader. Active readers are defined as those individuals who usually start reading early in life and continue this behavior throughout their years. They read frequently and have a broad range of interests. Some information is presented regarding personality characteristics and reading preferences. Also mentioned are outcomes of reading. Most of this information comes from research studies within the scholarly literature.

About 50 years ago (April 6, 1933) William Lyon Phelps, an American educator and author, made a radio broadcast on the topic of "Owning Books". He opened the broadcast with these words, "The habit of reading is one of the greatest resources of mankind...Literature is the immortal part of history; it is the best and most enduring part of personality."[1]

Being able to read is indeed a valued skill. It has been suggested that as people learn to use reading their lives are powerfully yet subtly shaped. David Bloome views this as a social process and claims it allows us to ask a broad range of questions about the role of reading in shaping people's lives.[2] Reading can be a most significant factor in the lives of many people. Nancy Jolly expressed this thought by saying, "What we read shapes our expectations and our actions; reality -- what we experience determines our choice of reading matter."[3]

In the dedication to W. H. Auden's collection of essays, "The Dyer's Hand",[4] Auden paid tribute

to --
Three grateful memories:
a home full of books
a childhood spent in country provinces
a tutor in whom one could confide.

Perhaps Auden's early exposure to books stimulated his literary career.

A lack of books or not being able to read can be a serious handicap. It has been reported that: 60% of the prison population in this country cannot read; 40% of the welfare recipients cannot read; 50% of the unemployed are illiterates, and 28% of high school dropouts cannot read.[5]

Another way to look at this problem is to compare and study traits in specific areas of the country. In the 1983 edition of The Condition of Education, Minnesota is identified as the state with the highest percentage (85%) of high school graduates as a percent of age group. The District of Columbia is lowest with a percentage of 57%.[6] Washington, D.C. also has 7% more crime reported per 100,000 inhabitants than does the Minneapolis-St. Paul area.[7] Additionally, Washington, D.C. has 246 parolees per 100,000 inhabitants and Minnesota has 39 parolees per 100,000.[8] Educational level and the ability to read in particular may help to explain many problems within our society.

Walter J. Slatoff has taken the extreme position that, "We know almost nothing about the process of reading and the interaction of man and book."[9] This may be so, but an examination of reading patterns, early learning characteristics, and environments does provide valuable information for reading and study skills professionals. An understanding of this research often provides clues or explanations of what has happened and what should be done to help students.

What Is An Active Reader?

Research and descriptive studies of the active reader (i.e., one who starts reading early in life with a broad range of interests and continues this behavior) are of particular interest, because they identify salient characteristics and acquired traits of people who like to read. This information can be useful to professional reading and study skills teachers. A diagnosis of and a prognosis for poor readers might be strengthened with reference to characteristics of active readers.

The term "active reader" in professional literature refers to: mature readers, efficient readers, gifted readers, prolific readers, avid readers, fluent readers, good readers, eager readers, superior readers, and high readers.

Eleanor Gibson and Harry Levin characterize the mature reader as being able to: classify (semantic grouping); make inferences from statements given in the text; and adapt a reading style and speed to the nature of the text and to the reader's purpose.[10] George Spache and Paul C. Berg have emphasized the mark of an efficient reader as flexibility in reading methods and reading speeds.[11] Patricia H. Duncan, with a rather stark observation, said, "Less well-educated individuals are judged to be reluctant readers."[12] It is true that college graduates not only acquire new knowledge, skills, and interests, they also use printed media (newspapers, magazines and books) more than nongraduates.[13]

Research Studies

Some of the first research studies involving active readers at an early age were accomplished while studying the concept of reading readiness. In the early 1900s children started first grade at age six. A chronological age of six was the criterion for starting reading, and it was not without some severe critics.[14] John Dewey was one of the most influential critics. Dewey characterized school instruction in reading as passive and mechanical.[15]

The educational literature of the 1920s contains numerous research studies citing the correlation between intelligence and reading achievement of first grade children. Reading readiness tests flourished from the 1920s into the 1930s. In 1937 Arthur I. Gates said, "Reading is begun by very different materials, methods, and general procedures, some of which a pupil can master at the mental age of five with reasonable ease, others of which would give him difficulty at the mental age of seven."[16]

Into the 1950s reading professionals gave considerable attention to maturation, mental age, and readiness testing. "Too often overlooked was the possibility that changes in instruction might affect a child's readiness to begin to read."[17] Helen P. Davidson completed a study in 1931 of 13 children each with a mental age of four years. Davidson wanted to find out if children with a mental age of only four years could learn to read. Results indicated that all the children had learned to read some words. Davidson concluded early training in reading is not injurious to children.[18]

Investigations of gifted children, those whose tested IQ are somewhere around 120 or better, indicate they are active readers and prime candidates for research studies. Lewis M. Terman's research with gifted children in the 1920s mentions that 250 of his 552 subjects reported having learned to read before starting school. Of these, 113 said they learned to read before the age of five; 34 learned to read before they were four, and 9, before they were three.[19] In 1954 Ruth Strang's research found that about half of the 54 junior high school students who had IQs of 120 or higher learned to read when they were five years old or younger.[20] Lawrence M. Kasdon reported on 50 superior readers among college freshman and found that 27 claimed to be reading before entering the first grade. Of the remaining 23 subjects, 14 learned to read during first grade.[21]

In 1969 Florence Schale presented a paper to the North Central Reading Association titled "Gifted Rapid Readers."[22] She observed that one student out of 100 or one percent of the trained population is a gifted, rapid reader (i.e., can maintain 70 percent or above comprehension at rates above 20,000 words per minute). Schale found these characteristics in the gifted, rapid readers:

1) superior ability to recall most of what was read
2) highly developed eidetic memory (i.e., a memory that produces visual images having almost photographic accuracy)
3) strong dominance traits
4) excellent eyesight
5) encouraging environment at home from a parent or relative.[23]

Walter B. Barbe published a review of literature titled "Characteristics of Gifted Children" in 1955 in which he found these characteristics to be important:[24]

1) Gifted children show on the average a high level of physical development, health, mental and social adjustment.
2) There is early development of self-criticism, initiative, and independence in thinking, ability to see relationships, make associations, adapt abstract principals to concrete situations, and observe and remember details.
3) Gifted children have a high degree of general intelligence.
4) Follow-up studies have shown gifted children maintain their superiority throughout life.
5) Nearly half of the gifted children identified in one study (Terman & Oden) learned to read before starting to school.[25]

6) Gifted children read easily, read more and better books than the average child.
7) Gifted children read more science, history, biography, travel books, folk tales, informational fiction, poetry, and drama and proportionately fewer books of adventure or mystery and far less emotional fiction.[26]

In a recent book by Virginia Z. Ehrlich (1982) a checklist of traits is provided to compare gifted students with their peers.[27] This checklist identifies these traits for the gifted:

1) enjoys reading
2) is an avid reader
3) reads widely
4) learned to read early
5) is self-taught reader
6) reads more and better books than age peers
7) reads above grade level by at least two years
8) selects difficult books for reading
9) enjoys information books such as encyclopedias, dictionaries, atlases, and biographies.[28]

Ehrlich has identified a total of 46 traits in which the gifted excel when compared to their age peers. These are: vocabulary, verbal facility, reading, writing, memory, learning, thinking, flexibility of thought, abstract reasoning, symbolic thought, generalization -- insight, complexity, planning and organization, creativity and imagination, originality, curiosity, sense of wonder, range of information, range of interests, aesthetic interests and/or talents, attention to detail, outstanding performance, scholastic achievement, leadership, attention and concentration, persistence, self-criticism, responsiveness, strength of character, candidness, dependability, social responsibility, cooperation, common sense, sensitivity, popularity, enthusiasm, sense of humor, spatial relationships, emotional stability, self-sufficiency and self-confidence, health, energy, early development, comparison with siblings and others, and preference for older playmates.[29]

Eunice H. Price published a most interesting, brief study in 1976 titled "How Thirty-Seven Gifted Children Learned to Read."[30] Of the 37 gifted children studied, 28 (76 percent) were reading when they entered first grade. One father said he taught his daughter to read using a combination of phonics and sight words. Another parent reported the child was taught to read at age three because of the high interest shown by the child. When one mother noticed that her child was reading names of products on TV without seeing the products, the mother and grandmother then taught the child to read at age three and a half.[31]

Price found these characteristics:

1) Thirty-four of the 37 parents started reading to their children from birth or when they were able to sit up.
2) Mothers were listed most (36 times) in answer to the question, "Who read to them?" However, 23 answers listed father in addition to mother.
3) The majority of these children walked and talked early.
4) Parents of these gifted children noticed active imaginations, curiosity, and problem-solving capacity during early development.[32]

The last sentence in Price's article states, "Reading to a child at an early age can provide opportunity for children's own intelligence to go to work on reading."[33]

In 1961 Dolores Durkin published a descriptive study of 49 first grade children who learned to read before grade one.[34] The factors that Durkin identified as being most relevant in early learning are:

1) The children had exceptionally good memories and the ability to concentrate.

2) A majority of the children were described as curious, conscientious, serious minded, persistent, and self-reliant.
3) All children had been read to regularly at home. In some instances this reading began at age two.
4) In all 49 families there was at least one person who took time and had the patience to answer the child's questions about words and about reading.[35] Most of the parents said the questioning was constant.

In this study over one-third of the children had IQs of less than 110, indicating that important intellectual factors or abilities are not always included in intelligence quotients.[36]

In 1976 James R. Evans and Linda Jones Smith reported on superior readers in preschool and kindergarten.[37] Nineteen children between the ages of four years, nine months and six years, five months were studied. "Of all the skills areas measured, only sound blending and visual memory for letters were superior in all these children.[38] Evans and Jones speculated that skills such as sound blending and visual memory for letters are developed by, or concurrently with, the reading skill.

In 1977 Chari Briggs and David Elkind published an article titled "Characteristics of Early Readers" which was based on parental interview data.[39] Thirty-three early readers (before kindergarten) and 33 matched, control children were given a battery of tests, and their parents were interviewed on 47 items dealing with demography, parenting practices, and child characteristics. Testing revealed that early readers were superior to non-readers on Auditory Closure and Sound Blending. Early readers also gave superior performances on the creativity test. Perhaps early reading requires a certain openness and flexibility with respect to relationships between words and their meaning.[40]

From interview data Briggs and Elkind found:
1) Parental achievement motivation was related to early reading.
2) Parents of early readers took their children to the library more often, read to their children at an early age, and created a language rich environment for them.
3) Parents rather than children's interest may be the main motivational determinant of early reading.[41]

Briggs and Elkind concluded that a relatively small proportion of children (about one to three in a hundred) read before first grade.

Ruth L. Gottesman, Lila Croen, and Laurence Rotkin have examined good and poor readers in an urban second grade.[42] From their review of literature, they identify four factors that might contribute to poor reading:
1) adverse pregnancy and birth factors
2) lack of stimulation in language and congitive areas
3) low educational level of mothers
4) less than adequate school environment[43]

Gottesman, et al. believe it is difficult to know if poor readers at an early age are truly deficient in abilities related to reading. They may be showing a delay in some aspect of intellectual development and will in time catch up with their peers. However, intervention at a primary-grade level may significantly enhance reading achievement throughout their lives.[44]

This spring (1984) Keith E. Stanovich, Anne E. Cunningham, and Dorothy J. Feeman published a fine scholarly article with an excellent review of literature. Their article is titled "Intelligence, Cognitive Skills, and Early Reading Progress."[45] Fifty-six first grade children were administered measures of general intelligence, decoding speed, phonological awareness, and listening comprehension. Decoding speed accounted for the largest amount of variance. But the notion that reading is strongly related to general intelligence once differences in decoding ability have been accounted for was not supported.[46]

Some findings from the Stanovich, et al. article are:

1) Decoding speed is relatively independent of general intelligence and listening comprehension for first grade children.
2) It appears that an understanding of early reading progress will not be enhanced by substituting notions of general intelligence for a process analysis of individual differences in reading ability.
3) While reading is dependent on listening comprehension ability at all ages, this relationship becomes stronger at the higher levels of reading skill.
4) Inadequate decoding skills result in unrewarding early reading experiences that lead to less involvement in reading-related activities.
5) The speed of early reading acquisition is substatially correlated with reading performance later in life.
6) Single-factor theories of reading failure are rejected and multiple-cause theories are supported.
7) In the first grade general intelligence was not a strong predicator of reading comprehension.
8) The correlation between reading comprehension and general intelligence increases with age.[47]

One particularly good follow-up study of young readers has been conducted by Mary Evalyn Howden.[48] This study by Howden is titled "A Nineteen-Year Follow-Up Study of Good, Average and Poor Readers in the Fifth and Sixth Grades". Howden investigated the reading characteristics of adults in a nineteen-year follow-up study sampling a group of 338 fifth and sixth grade children tested in 1948, at an Oregon public school system.[49]

These conclusions and findings came from Howden's study:

1) Preference for reading as a leisure activity, the reading of books, and leisure time investment in reading are positively related to adult reading skill.
2) Good readers are somewhat more likely to exercise their voting franchise as adults than are average and poor readers.
3) Reading skill and reading time investment tend to increase with social status.
4) Parental social class appears to be positively related both to childhood and to adult reading.
5) The amount of parental reading as recalled by adult subjects is positively related to adult reading test scores.
6) Adults who remember their parents as having read much in books, magazines, and newspapers tend to be average or good readers themselves. This effect is less striking at the other extreme, for adults remembering their parents as having read little or nothing.
7) No sex differences noted except in reading achievement. Males appear to outnumber females at the lower extremes of adult reading achievement as measured by the Gates Reading Survey. David P. Ausubel has explained this type of finding by identifying a sex bias. Girls receive much more approval and considerably less scolding from teachers than boys. "It is not at all surprising, therefore, that boys furnish a disproportionate share of non-readers, the underachievers, the truants, the behavior problems, the inattentive, and the dropouts".[50]
8) When reading subskills as measured by the Gates Reading Survey are considered, children who are poor readers in the fifth and sixth grades tend to be stronger in vocabulary than in comprehension, as a

group. Those who remain poor readers as adults are likely to reverse this relationship, so that the comprehension score is higher than the vocabulary score.

9) Even in a geographical setting where the majority of employment opportunities make little demand on literacy, poor reading ability is still regarded as a hindrance to economic advancement and as a pitfall in social situations.
10) For most of those adults, near thirty years of age, their future as readers was already predictable by the time they were in the fifth or sixth grade.
11) If achievement patterns which will carry into adult life are already clearly formed for most children by fifth or sixth grade, the years of life prior to this seem crucial.
12) The attempt to teach reading remains a most powerful tool.
13) All of the identified good readers (nine) were either firstborn or only children.[51]

Another good study involving what Margaret M. Clark calls fluent readers was started in 1969.[52] Thirty-two children who were already reading fluently and with understanding when they started school at approximately five years of age formed the basis of the study. An intensive detailed analysis of these young fluent readers was made. This study was accomplished in Dunbartonshire, Glasgow, and Stirlingshire, Scotland.

These observations were made by Clark:

1) It is important to consider not only the extent to which the child is ready for school but also the extent to which the teacher is ready to receive the child on the level at which he is functioning.
2) Reading to children not only anticipates the reading instruction but also is part of the process of learning the character-

istics of written language and, therefore, an integral part of the reading instruction. The more the child has become sensitized to the structure of written language, the more likely he is to make the appropriate anticipations when reading himself.

3) The early reading of boys was more likely to be associated with their other specific interests, while the girls aimed at extending their reading of fictional stories.

4) Reading to children, especially where this involves frequent repetition of the same stories, may well lead to improved ability to predict one's way through print by anticipating the correct word or possible correct words.

5) None of the mothers were under 20 at the time of birth, and 15 were over 30 years of age. The warmth of interest shown by these mothers in their children's development was quite remarkable. This may be related, among other things, to their age at the time of birth.

6) The mothers all expressed interest in their child's progress and found the children stimulating companions. Few had worked even part-time while their children were of pre-school age; nor had they sent their children either to a nursery school or play group.

7) Left-handedness or slow development of dominant handedness is frequently quoted as a significant feature in children who later develop reading or language difficulties. One of the boys of mixed handedness had shown some reading difficulties. His mother reported high blood pressure during pregnancy. She had an earlier history of frequent miscarriages. The child suffered from a concussion at an early age.

8) Half of the children were already making use of the public library. The local library was a crucial source of reading material for these children even at this early age.
9) These young fluent readers were very self-sufficient children.
10) When their precocious reading habits were coupled with a high level of intelligence and general knowledge well beyond their years, these children were a challenge to their teachers.
11) These children were average or below average in motor co-ordination. Most were only average in art, handwork, physical education, and games.
12) Mothers encouraged independence and found time to read to their children, talk to them, and listen to them.
13) While interviewing mothers, the value of a sense of humor and of fun was mentioned repeatedly.
14) It became increasingly clear that in most of the homes both parents played a crucial role in their children's intellectual development.
15) The most significant characteristics of these children are concentration and self-sufficiency.
16) Most of the fluent readers had available during pre-school an interested adult who talked and listened to them.
17) For all children, books formed a fascinating part of their life, and shared experience.[53]

Personality characteristics of poor readers (with the ultimate objective of determining an effective remedial treatment) was studied by Authur Gates and published in 1941. This became one of his most famous reviews.[54] Gates concluded that personality maladjustment is frequently found to coexist with reading disability. He said, "My estimate is that among cases of very marked specific reading disability, about 75 percent will show personality maladjustment.[55]

On the topic of personality characteristics concerning good and poor readers, it has been reported that poor readers are socially naive and less serious; they are also less exacting and more lax. Good male readers have been identified as more intelligent; they have more self-sentiment are more careful and shy, and more independent than poor male readers. Good female readers tend to be more critical and precise; they are emotionally stable, less anxious, and more independent than poor female readers.[56]

In regard to test anxious readers in college, David Wark has found evidence that students who are unconcerned about test panic seem to be taking in their environment.[58] They focus on words and thoughts. Test-anxious students seem to be rejecting the text. Wark said, "The mode of responding may have to do with their feelings and discomfort, rather than the material they are reading".[58] This suggests that reading, even for bright, college level students, is subject to psychological variables that have nothing to do with the ability to read. Active readers *may* show up as mediocre students for reasons associated with poor utilization of their acquired skills.

In a most interesting but quite complex volume, Norman W. Holland presents evidence indicating the most skilled readers can diverge markedly in their interpretations of widely accepted classics.[59] Holland starts his book with a quote from William Blake:

> Both read the Bible day and night,
> But thou read'st black where I read
> white.[60]

Holland believes it is possible to see how each reader creates from the literary work a psychological process in herself or himself. He says, "All readings originate in the reader's personality -- all are 'subjective' in that sense... a reader responds to a literary work by using it to re-create his own characteristic psychological process."[61] Marcel Proust has put it this way, "In reality, each reader reads only what is already within himself. The book is only a sort of optional instrument which the writer offers to the reader to enable the latter to discover in himself what he would not have found but for the aid of the book."[62]

Indeed, reading does something to a reader and a number of studies have tried to measure these feelings by: hormone concentrations, heart rate, fidget frequency, and galvanic skin reactions.[63] Perhaps, active readers compared to non-readers are in better control of their emotions as well as being in strict control of their reading material. Active readers may have learned in some way or another that too much emotional involvement is debilitating. They also may have a greater depth of emotional resources.

Studies of so-called adult, active readers repeat many of the characteristics found among pre-school, fluent readers. Patricia H. Duncan and William F. Goggin found these characteristics emerging after interviewing 21 retired adults who were active, lifelong readers:

1) active, retired, adult readers started reading early in life with the support and guidance of family members.
2) Good readers were aware of literary resources and continued to enjoy similar types of reading materials throughout their lives.
3) Adult readers added new types of reading materials as environmental influences changed and discarded materials when they were no longer relevant.
4) For these people, reading was personal.
5) They were articulate, alert, and mentally active.
6) The readers maintained a sense of humor and had other interests to complement their reading.[64]

Ronald A. Jobe found similar characteristics while doing a survey of adult, active readers. They learned to read before starting school and were influenced by parents who read to them. Their parents read for enjoyment and owned many books.[65] Jobe also makes the point that teachers must be enthusiastic readers.

In a study of 101 older adults, Kathleen M. Ngandu found:

1) A wide range of reading interests, including mysteries, biographies, and histories.
2) Frequent use of library facilities with 74% citing libraries as their main source of reading materials.
3) Reading activities occupied 2/5 hours of an average day, while their television viewing time averaged 2.4 hours.
4) Their greatest motivations for reading were enjoyment and gathering information.[66]

Studying characteristics of older readers might be a predictable, circular process. Educational level appears to determine the amount, type, and variety of reading materials consumed, and longevity is significantly correlated to educational level.[67] Those with a higher educational level live longer. So a study of older adults should be over-represented with active readers.

A study of prominent individuals who read frequently and diligently provides some evidence to sustain characteristics found through research. This also seems to hold true in cross-cultural examinations. Mohandas Karamchand Gandhi said he was only a mediocre student when he started school.[68] He was shy and avoided all company. This shyness extended into his early career. Gandhi's home life was cultured with books in the house. "My books and my lessons were my sole companions," said Gandhi.[69] Indeed, Gandhi was quite thoughtful, and he had a strong supportive mother: "The outstanding impressions my mother has left on my memory is that of saintliness. She was deeply religious."[70]

It may be that an appropriate religious influence can significantly structure a helpful and supportive climate for the potential active reader. In Gandhi's case, religion did not interfere with his strong political views, and his political views did not infringe on his religious observance. He was not trying to convert the British to Hinduism; he simply wanted political independence for his country.

Albert Schweitzer was a profound Christian all of his life and an excellent example of talent mobilized for the needs of humanity.[71] As a philosopher, theologian, musician, and medical missionary, he remains a distinctive role model for all of us. Schweitzer got music lessons from his father at age five, but was a poor scholar in his early years at the Gymnasium.[72]

For Charles de Gaulle, his home was a primary influence throughout his formative years.[73] DeGaulle's father was one of the most eminent teachers in Paris, and he added education to every family activity. The de Gaulles were a loving and united family. Charles de Gaulle was a voracious reader with a remarkable memory, a gift that he seemed to inherit from his father and retained throughout his life. "He devoured newspapers and novels as well as the standard classics in French, Latin and Greek."[74]

Reading newspapers in a thorough and complete fashion was a lifelong habit for Mao Tse-tung. Mao was raised gently, but clashed with his father. This seemed to establish a strong sense of justice which made him burn with fury at times.[75] Mao's mother "...was plump and kind-eyed: a contrast to her thin, sharp husband, and she was as soft and accommodating as he was harsh and driven."[76] Mao Tse-tung loved to read. As a student, he tracked down every book available within his rural area of Music Mountain in Hunan Provance.

Active readers may be more likely to develop perspectives that relate to thoughtfulness and purpose. They may also be more committed and resolute.

Summary

A primary factor in the development of active readers seems to be family influence with special emphasis on supportive strategies for reading. Independence training with a mixture of freedom and structure appears to be critical but also illusive. The right mixture is always a fine spun combination of certain parental judgments.

For reading and study skills teachers, a knowledge of these active reader characteristics and the related research studies might be useful in many ways. Knowing and understanding a student's background, supplemented with research knowledge, may be an aid in providing prompt remedial strategies. Many students need considerable support and understanding from teachers at all levels to overcome intellectual handicaps inherited from their home.

Teachers are always in a better position to evaluate their students and provide helpful techniques when they know and understand developmental factors. What we know about our students can be translated and used to provide appropriate learning climates.

Learning from the research data helps to generate ideas, and it keeps us in focus with our student clients. As scholars we are entrusted to develop intellectual resources as best we can. This requires skill, knowledge, diligence, and considerable patience. Our own growth as professionals will determine to a significant degree our effectiveness as reading and study skills specialists.

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DIMENSIONS OF SPEED READING: A REVIEW OF RESEARCH LITERATURE

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ABSTRACT

This paper reviews the most significant researh studies, bibliographies, historical reviews, definitions, and commentaries on speed reading during the past 60 years with special emphasis given to the 1960s. Related speed reading concerns such as: comprehension, flexibility, skimming and scanning, various external factors affecting rate of reading and eye movement research studies are included. This information is developed chronologically. The information is organized into sections: introduction, a concept of speed reading, speed reading research, and a summary. Brief comments regarding quality and appropriateness are selectively offered.

Concept of Speed Reading

The term "speed reading" is a modern concept that became quite popular during the 1960s, although it existed in professional literature since the early 1900s. Allen Berger said the lack of precise terminology is the source of much confusion on this topic.[1] In something of an understatement he observed, "Speed reading, or increasing reading rate, is a rather sensitive topic."[2]

Miles A. Tinker, a prominent researcher in reading and typography, said the only justifiable or valid definition of speed reading is speed of comprehension.[3] George D. Spache defines reading as the act of reading most of the words on the page, and he uses that definition as a frame of reference.[4] Stanford E. Taylor suggests use of words dealt with per minute, W.D.P.M., be used to define speed reading.[5] Walter Pauk observed that people who deal in selling thousands of words per minute reading rates would do the field of reading a favor by coining another word for reading because what they are doing is not reading in the traditional sense.[6] Brenda Golembesky Smith says confusion with the definition of speed reading occurs because skimming and scanning are used synonymously with reading most words on a page.[7]

Speed reading is sometimes interchangable with other types of reading such as: rapid reading, accelerated reading, flexible reading, and remedial reading when emphasis is given to skimming and scanning. After 25 years there is still some confusion about the definition of speed reading.

Although college reading programs have been offered for at least four decades, speed reading as such is a relatively new concept.[8] As a matter of fact, many college reading programs have not attempted to get involved with notions of speed reading.[9] However, flexibility in knowing when to read rapidly is considered to be an important skill in most reading programs.[10] Anthony V. Manzo claims that rapid reading classes with some attention to study skills is the oldest and most traditional form of college reading instruction.[11]

In the early part of this century there were no standardized reading tests of any kind. The first one was published in 1915 and concentrated on silent reading, comprehension, with little emphasis on speed.[12] In 1921 J. A. O'Brien published a volume titled Silent Reading, with Special Reference to Speed.[13] This reading text was one of the first to mention speed, but it placed emphasis on silent reading. To check speed, students read orally in class, and the number of lines read per minute were counted. Interest in reading speed may have developed as an aspect of silent reading.[14]

In the 1930s some studies were conducted to determine whether males or females read faster. Berman and Bird published a study in 1933 based on

463 females and 327 males, all sophomore psychology students. They determined that females read about 20 words per minute faster than males. Furthermore, they observed that females have a general language superiority that is manifested from infancy to adult life.[15]

Allen Berger has an excellent annotated bibliography on speed reading that starts in the 1930s.[16] This work was published in 1970 and includes approximately 150 references (journals and books) to speed reading which appeared between 1930-1970. These references are grouped in ten categories: tachistoscopic and controlled pacing, paperback scanning, retention of gains, flexibility, perception, processing information, studying, conditioning, sex differences, and measurement.[17]

Speed Reading Research

Research studies on speed reading were not abundant in professional literature until the 1960s. Few research studies were being reported in the 1940s due to wartime demands on scientific talent. Tachistoscopes were used in World War II to train military personnel to recognize airplane silhouettes more rapidly.[18] Allen Berger includes five interesting studies from the 1940s in his annotated bibliography:[19]

1) E. B. Cason's "Mechanical Methods for Increasing the Speed of Reading" appeared in 1943, and no significant differences in reading results were found using various mechanical methods to increase speed.[20]
2) J. B. Stroud and M. Henderson published "Rate of Reading and Learning by Reading" in 1943. They concluded that reading rate and comprehension varies with conditions of reading imposed and with the method of measurement employed.[21]
3) Irving H. Anderson and Cameron W. Meredith published "The Reading of Projected

Books with Special References to Rate and Visual Fatigue" in 1948. They found reading a book (C. S. Forester's Captain Horatio Hornblower) was 12 percent faster than reading the projected version; in both ways, the fastest reading was toward the end of the allotted two-hour period.[22]

4) Miles A. Tinker published "Cumulative Effect of Marginal Conditions Upon Rate of Perception in Reading" in 1948. He found speed of perception was retarded 10.4 percent when these precise conditions prevailed: reading eight point type, italic type form, under three footcandles for one-three quarter minutes. Measuring instrument was Tinker's Speed of Reading Test.[23]
5) Miles A. Tinker and Donald G. Patterson published "Speed of Reading Nine Point Type in Relation to Line Width and Leading" in 1949. They found optimal rate of reading occurs with line widths of 14 to 30 picas with one to four points leading.[24]

One prominent dimension of speed reading research that sometimes gets little attention is eye movement studies. Miles A. Tinker of the University of Minnesota conducted some excellent studies on speed reading capability while doing eye movement research. Tinker also produced some scholarly literature reviews on eye movement research in this country that can be considered definitive works. All of the important eye movement research in the United States between 1900 and 1945 is reviewed by Tinker in two articles: "Eye Movements in Reading" (Journal of Educational Research, 1936) and "The Study of Eye Movements in Reading" (Psychological Bulletin, 1946).[25]

In 1958 Tinker published "Recent Studies of Eye Movements in Reading" (Psychological Bulletin) which covered January 1945 to October 1957.[26]

This is an excellent review of the litereature on eye movement research as it applies to reading. The explanations of technical detail are quite extraordinary. Tinker organized this literature into five categories: techniques of measurement, analysis of the reading process, training to improve eye movements, typography and eye movements, and eye movements and fatigue. Within the category of "analysis of the reading process" Tinker found that saccadic eye movements, those employed in reading, appear to be remarkably constant in speed.[27] After providing a detailed technical explanation, Tinker suggests that any reading rate over approximately 800 words per minute (W.P.M.) can only mean the reader is skimming rather than reading all the material.[28] He bluntly said, "Any claims by advertised reading improvement programs that one can learn to read at 1500 to 3000 or more W.P.M. can only be false."[29] Toward the end of this article Tinker becomes a bit pessimistic. He concludes by stating, "The future study of eye movements in reading does not appear to be too promising."[30] However, at this time (1958) eye movement research was about to become involved in a highly controversial speed reading debate.

A British article by Ray Williams claims a French oculist named Javal found that individuals read in a series of pauses and jerks (saccadic movements).[31] This finding by Javal was accomplished in 1879.[32] The pauses are known as fixations, and reading only takes place during fixations.

Tinker found that six to eight percent of most reading time is devoted to eye movements; the rest (92-94%) is spent on pauses.[33] During a pause the reader can see words clearly but must take time for perception and thinking. Pause duration alone has poor validity as a measure of reading proficiency, but when combined with fixation frequency a perception time can be calculated.[34] According to Tinker, perception time is a fairly valid measure of speed reading proficiency.[35]

Mechanical devices such as tachistoscopes, pacers and films have attempted to improve reading speed by lowering the number of fixations.[36] Williams stated that on average, individuals make between three and five fixations per second. "The average duration of fixation is about 0.25 of a second, irrespective of the reader's speed or the type of material.[37] Williams also states, "The efficient reader's regressions account for less than 10% of his total fixations, whereas the inefficient reader's regression rate may be as high as 40%."[38] Fixations made in reverse direction are known as regressions.

One significant point resulting from eye movement research is the identification of a physiological upper limit to usable eye span, usually regarded as 1.5 inches of average print size.[39] When assessing claims of mechanical devices to increase reading speed, it is important to understand this physiological limit.[40] Ray Williams presents research findings from Berger, Karlin, and Manolakes that questions the usefulness of mechanical devices.[41] He believes reading skills improvement will be low and comprehension questionable when using ad hoc courses that set out to improve reading speed by means of mechanical devices.[42]

In this country, George D. Spache and Stanford E. Taylor, two distinguished reading specialists, became interested in eye movement photography in the 1950s, and they had considerable impact in helping to analyze extravagant speed reading claims of the 1960s. Luther C. Gilbert, another distinguished eye movement researcher, was also publishing in the 1950s.[43]

Spache found there is a tendency to revert to the usual pattern of eye movements when emphasis is placed on comprehension. When reading rate is stressed with emphasis to read fast, the reading pattern changes, and there is significant loss of comprehension.[44] Spache "...suggests that reading under rate pressure is apparently an abnormal, less efficient process in most instances."[45]

Stanford E. Taylor found that average reading rate of students increases from about 80 W.P.M. in the first grade to about 280 W.P.M. in college.[46] David J. Yarington said that most adults in our country, including college graduates, read at a rate around 250 W.P.M. "Most of us tend to read everything at the same rates," says Yarington.[47] Walter Pauk, with his straight-forward, jaunty style, put it this way: "Most students read the back of the cereal box at the breakfast table with the same rapt attention that they read their physics textbooks."[48]

In a recent study (1983) Ronald P. Carver presents evidence from 333 subjects (grades four through college) to support the theory that individuals typically read at a constant rate rather than adjusting their rate to the difficulty level of the material. Carver found that reading rate tended to be constant for each reading ability level when estimates of rate were corrected for differences in word length.[49]

Martha J. Maxwell's fine article on skimming and scanning (1973) contains a reference to Nason and MacDonald's study of over 6,000 students.[50] Ninety percent of these students failed to vary their reading rate despite instructions to read for different purposes and despite variation in the difficulty level (style and content).[51] Nason and MacDonald conclude that reading rate appears to be habitual and invariant.[52] In another article on skimming, Maxwell cites research studies from Ulric Neisser's volume, Cognitive Psychology (1967), indicating the maximum scanning rate for words when meaning must be taken into account is 300 W.P.M.[53] Neisser states that, "...high speed reading is as impossible in theory as it is common in practice."[54]

In the 1950s there was considerable attention devoted to flexibility of reading rate. Leonard S. Braam and William D. Sheldon published Developing Efficient Reading in 1959, a volume devoted to good study habits.[55] They give emphasis to reading flexibility over speed for the sake of speed. George D. Spache and Paul C. Berg published The Art of Efficient Reading in 1955.[56] They have a section on rapid reading that only covers skimming and scanning. Spache and Berg treat skimming and scanning as particular techniques that help with reading. They do not define skimming and scanning as reading.[57] Phil L. Nacke has an excellent article (1970) on flexible reading that exposes some representative studies from the 1950s:[58]

1) William D. Sheldon and Lawrence W. Carillo. "The Flexibility of Reading Rate," Journal of Educational Psychology, May 1952.[59]
2) Charles T. Letson. "The Relative Influence of Materials and Purpose on Reading Rates," Journal of Educational Research, February 1959.[60]
3) Leonard S. Braam and William D. Sheldon. Developing Efficient Reading. Oxford University Press, 1959.[61]
4) Charles T. Letson. "Building An Informal Flexibility Test," Education, May 1960.[62]

Nacke offers three primary factors that generally affect reading speed:

1) Reader's purpose (internal and external).
2) Level of difficulty of material (terminology and level of ideation).
3) Degree of familiarity or prior knowledge of the subject matter.[63]

Prior to the 1960s the approach to speed reading or rapid reading (a term more acceptable to serious researchers) seemed to be cautious and on the conservative side. Researchers such as Miles Tinker, George Spache, and Sanford Taylor were quite aware of the eye's physiological limits when reading. Their research findings were studied by many reading professionals, and enthusiastic claims announcing techniques for reading beyond physiological limits were not especially bothersome. This placid environment changed abruptly starting in 1960.

On August 22, 1960, Time magazine devoted little more than one column to the new Reading Dynamics Institute in Washington, D.C. founded by Evelyn Nielsen Wood.[64] Wood is described as slim, earnest, 51 years old, and interested in speed reading for the past 15 years. Her speech teacher at the University of Utah, when she was working on her masters, impressed her with an alleged untrained reading speed of 6,000 W.P.M.[65] Wood said "Speed is not most important, but only through speed do you get good comprehension."[66]

Her new method to increase speed and reduce regression is explained this way: students learn the "whirlaway motion," a series of circular sweeps with their fingers going down the middle of the page. The students learn to look down the center of the page as they read. They read vertically from top to bottom. As a result of Wood's technique, Time reported that one pert college girl read a sociology text book at the rate of 14,000 W.P.M. A Wilmington librarian claimed 20,000 W.P.M. using Wood's technique.[67] Dr. Zhivago can be read in one hour using Wood's methods. "You don't see the words as words," says Wood. "The story rolls into you. You get the total impact."[68] Senator Herman Talmadge from Georgia called his own improvement, using Wood's techniques, "fantastic."[69] Senator Talmadge also said it would be worth a million dollar appropriation to set up the Wood system in all of Georgia's schools. A fascinated General Electric engineer predicted, "A storm will come up when this breaks."[70]

Indeed storms of various kinds did come up. Time's national publicity of Evelyn Wood's technique with associated claims of being able to read thousands of words per minute was the symbolic start of speed reading mania in this country. Two months later (October, 1960) the Wilson Library Bulletin[71] published a mocking rebuttal: "We have a sneaking atavistic urge to see a Wood student skidding to a halt in a page of Henry James of the third period, or stalled dead in Finnegan's Wake[72]

In the November, 1960, issue of The Reading Teacher, Evelyn Wood published, "A Breakthrough in Reading."[73] This article is a discursive review of her interest in speed reading. In the last paragraph she makes reference to standardized comprehension tests and her reading techniques. She said her results from standardized tests are high, so high that more adequate kinds of testing must be provided. "Otherwise too many students who read very fast and accurately push against the ceilings of the test."[74]

Fourteen months later (January, 1962) George D. Spache published "Is This a Breakthrough in Reading?" in The Reading Teacher.[75] This article is one of the most frequently cited references on speed reading within the professional literature. Spache said in reference to Evelyn Wood's November, 1960, "breakthrough" article, "This article is written to explore the scientific possibilities of such a breakthrough."[76] Spache indicated it is physiologically impossible to read faster than 800 to 900 W.P.M., and he provides data from eye movement research.[77] Spache presents a carefully written, concise, scholarly summary to identify the weaknesses of Wood's speed reading technique. This brief article might be considered a classic.

In November, 1962, Lester R. Wheeler and Viola D. Wheeler published "A New Era in Reading" in The Reading Teacher.[78] They said speed reading institutes, schools, classes, and gadgets are mushrooming to meet popular demands for better and faster reading. However, they expressed concern that, "Schools of Education are not training teachers how to cope with the new concepts required for space-age reading."[79]

President John F. Kennedy was inaugurated January 17, 1961, and influenced the country with his dynamic, engaging personality.[80] He was reported to be able to skim through newspapers and books quite rapidly. His youthful, energetic approach to problems helped to set a national tone for expediency. Speed reading along with skimming and scanning techniques seemed to be quite appropriate for the decade of the '60s.

The 1962 National Reading Conference had "Problems of Reading Speed and Comprehension," as one of their primary topics.[81] Earl F. Rankin, Jr., presented a paper to this conference titled "The Relationship Between Reading Rate and Comprehension."[82] After reviewing disagreements regarding the relationship between speed and comprehension, Rankin narrows his focus to problems of testing procedures. He concludes by saying, "When the material is more difficult, when more critical thought processes are involved, and when the reader's purpose is more exacting, the relationship between reading rate and comprehension is minimal."[83] Charles T. Letson addressed the conference on the topic of "The Future of Rapid Reading" and said, "The introduction of speed as a factor in reading ability has created a revolution in the field of reading."[84]

Numerous researchers quickly turned their attention to factors that might influence reading speed. Alton L. Raygor, David M. Wark, and Ann Dell Warren published "Operant Conditioning of Reading Rate: The Effect of a Secondary Reinforcer" in 1966 and found significant gains in reading rate with the use of reinforcement from green lights.[85] Others such as Martha J. Maxwell focused attention on appropriate skimming and scanning techniques that might be beneficial to students.[86]

One of the most comprehensive and interesting articles on speed reading during the 1960s was written by Allen Berger and presented to the International Reading Association in 1968.[87] This article is titled "Speed Reading: Is the Present Emphasis Desirable?" Berger notes with some uneasiness that Evelyn Wood Reading Institutes are 200 strong located in 70 cities. Many others were also being attracted to the speed reading business. The April 8, 1968, issue of The National Observer had an ad for the Read-Ability System.[88] To purchase a franchise, $25,000 is needed. "...the executive consultant and program director of the Read-Ability System is Joyce Brothers, described in the advertisement as: 'author, columnist, radio broadcaster, television personality, educator.'"[89] Berger found one reference to an 11-year old boy reading 123,000 W.P.M.[90] At that rate he could read Gone With The Wind in less than five minutes if the pages could be turned fast enough. Woody Allen with a subtle reference to the Evelyn Wood technique is quoted as saying: "I took a course in speed reading, learning to read straight down the middle of the page, and I was able to go through War and Peace in 20 minutes. It's about Russia."[91]

Critics of a speed reading technique for study behavior are probably no more outspoken than Walter Pauk. He argues that speed reading is an inefficient if not disastrous technique to use in studying.[92] Lisa S. Fleisher, Joseph R. Jenkins, and Darlene Pany present evidence using poor readers which indicates comprehension does not increase when decoding speed increases.[93]

In 1968 Samuel Weintraub and Earl Hanson published an excellent review of 24 speed reading studies going back to 1884.[94] They emphasize that rates of reading are influenced by many factors, some may still be unknown. "It appears that physiological, psychological, intellectual, as well as factors outside the reader, may all be involved in affecting an individual's ability to read rapidly."[95]

The decade of the '70s had relatively moderate expectations from speed reading compared to the 1960s. These selected studies from the 1970s reflect this moderate trend:

1) Gladys B. Moore, "To Buy or Not to Buy" (1970) Journal of Reading.[96]
2) Melvin Howards, "Strategies for Improving Our Concepts and Techniques in Regard to Speed Reading." (1970) International Reading Association Conference.[97]
3) Angela M. Labmeier and Edward L. Vockell, "Effects and Correlates of a Course in

Speed Reading." (1971) ERIC.[98]

4) Florence Schale, "Measuring Degree and Rate of Visual Awareness in Rapid Reading on Television." (1971) National Reading Conference.[99]
5) Ronald P. Carver, "Speed Readers Don't Read; They Skim." (1972) Psychology Today. This article is a strong rebuke of Evelyn Wood's Reading Dynamics course. Carver says that speed reading is about five percent sense and 95 percent nonsense.[100]
6) Eleanor J. Gibson and Harry Levin, The Psychology of Reading (1975). There is an excellent section on rapid reading (pp. 539-49) that includes an analysis of Evelyn Wood's Reading Dynamics program. Several good studies are identified and explained.[101]
7) Mark D. Jackson and James L. McClelland, "Sensory and Cognitive Determinates of Reading Speed." (1975) Journal of Verbal Learning and Verbal Behavior.[102]
8) Brenda Gloembesky Smith, "Speed Reading Scores in Perspective." (1975) Journal of Reading. This brief article provides insight into some variables that can affect reading rate.[103]
9) James I. Brown, "Efficient Reading Courses for College Students." (1976) International Reading Association Conference.[104]
10) Leonard R. Mendelsohn, "Jetting to Utopia: The Speed Reading Phenomenon." (1977) Language Arts.[105]
11) Karen Steiner, "Speed Reading Revisited." (1978) Journal of Reading. Steiner believes flexibility or adaptability is a principle that can help educators fit speed reading into a realistic perspective.[106]

A healthy but not universal skepticism of speed reading techniques prevailed in the 1970s.

Richard G. Graf, writing in 1973 for Psychology Today said the merchants of speed reading have exaggerated their powers.[107] "The claim that most of us can increase our reading speed dramatically without loss of comprehension remains unsupported" according to Graf.[108]

The first half of the 1980s have not produced many speed reading articles within the professional literature. However, the topic of speed reading and Evelyn Wood's technique continue to be discussed after nearly 25 years of heated debate. In 1982 A. Garr Cranney, along with Bruce L. Brown, Dorothy M. Hansen and Dillon K. Inouye (all associated with Brigham Young University) published "Rate and Reading Dynamics Reconsidered."[109] This article is a light but unmistakable testimonial for some of Evelyn Wood's methods. The authors close by saying, "We hope rate research will continue. The answers to questions some of us have thought settled for many years may need reconsideration."[110]

Indeed rate of reading research continues. This summer (1985) Ronald P. Carver, a veteran critic of speed reading techniques, published a most impressive research paper titled "How Good Are Some Of The World's Best Readers?"[111] Reading rate and comprehension of superior readers were investigated. The superior readers were grouped as: speed readers, professionals, college students, and people who score exceptionally high on tests. Carver found that, "Speed readers seem to be quite similar in ability to other superior readers except that they typically choose to skim at rates higher than 1,000 words per minute and accept the lowered comprehension that accompanies skimming."[112] Carver states when speed readers do what is called speed reading, they are skimming. Furthermore, he says researchers and practitioners must consider the likelihood that a hoax is being perpetuated when it is suggested that a person can be trained to read at 1,000 W.P.M. or higher.[113]

Summary

As research with rapid reading concepts progressed, starting with early eye movement studies in the 1930s and '40s, there was a faint, parallel interest growing within educational circles to develop speed reading techniques. This speed reading interest was at its zenith during the 1960s when Evelyn Wood's new techniques were frantically embraced by the lay public as well as many as a dozen campuses each week and consulted with many influential groups to include the United States Air Force Academy. Her self-confident, evangelistic approach and unusual claims were focal points for speed reading debates within the academic community. Critics of Evelyn Wood usually focus on insufficient research data to support her methods and claims.

When the 1960s welcomed speed reading techniques with its promise of increased efficiency and productivity, there were great expectations. But the expectations faded. Some social historians have compared the '60s to the '20s, characterizing both decades as frivolous and reckless. The 1920s had flagpole sitters and marathon dancers while the 1960s had go-go dancers and speed readers going at 120,000 W.P.M. The roaring '20s and the speed reading '60s do have a few things in common. Both eras were quite dynamic and overwhelming. Eric Hoffer, while observing and studying the 1960s, said, "If one were to pick the chief trait which characterizes the temper of our time, it would be impatience."[114]

Jose' Ortega Y Gasset, one of Europe's greatest writers, said, "The most salient characteristic of life is its coerciveness: it is always urgent, 'here and now' without any possible postponement. Life is fired at us point-blank."[115] So we must do our best. For reading professionals, responsible for future generations of citizens, this means we should make an effort to understand significant research evidence.

In the case of speed reading, we have an opportunity to learn from previous scholars in order to make applications. Understanding the relationships and associated complications between speed and comprehension is most important. Flexibility or knowing when to scan and skim also ranks as a high priority. Speed reading definitions will always be dependent on such key variables as: physiological limits, environmental conditions (internal and external), and problems of measurement (methodological problems).

Research efforts often broaden our understanding when meandering ideas are fired at us point-blank. As professional educators our careers will have a better chance to thrive, provided our knowledge base remains vibrant.

NOTES

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THE VALIDITY OF THE DEGREES OF READING POWER TEST: A RESPONSE TO CARVER'S CRITIQUE

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ABSTRACT

This paper is written in response to an article by Carver (1985) entitled, "Is the Degrees of Reading Power Test Valid or Invalid? Carver concluded that the DRP test is invalid as a means of matching readers with textbooks because DRP test scores are not uniformly comparable to DRP readability values for text difficulty. The writer maintains that Carver's negative evaluation of DRP technology is not justified because of several questionable or false assumptions underlying his analysis. It is argued that Carver failed to understand several unique characteristics of the DRP test including: the nature of the reading construct being measured, the different operational definition of frustration, instructional, and independent reading levels being utilized, the importance of using other reading levels in addition to the instructional level for book selection in classroom settings, and the absolute necessity of taking factors other than DRP test scores into consideration in matching readers with textbooks as recommended by the test authors. The writer maintains that if the DRP test is evaluated as an instrument used to match reading skill with text difficulty, it's validity for this specific purpose can only be evaluated as an integral part of a total system including test scores, readability values, and professional judgments regarding other characteristics of both texts and readers.

In a paper entitled, "Is the Degrees of Reading Power Test Valid or Invalid?", Carver (1985) maintained that the DRP test is invalid for the purpose of assigning textbooks of appropriate difficulty to students who possess varying degrees of reading ability. He did not question the validity of the test for comparing reading achievement, measuring reading improvement, or diagnosing reading difficulties. He also did not question the validity of DRP readability measurements. However he maintained that the test cannot be used for assigning textbooks to readers because the test scores are not uniformly comparable to DRP values for text difficulty. The present paper represents a response to Carver's critical evaluation.

On the basis of his analysis of data from DRP publications and a rescaling of DRP test scores and readability values, Carver presented evidence which he believes proves that, "Either education is in need of drastic reform with respect to the difficulty level of instructional material used in each grade, or something is drastically invalid about the way the DRP test scores are obtained and matched with instructional materials." (p. 38) The present writer suggests that neither of these drastic alternatives is true. Rather it is much more likely that there is something, or rather several things, "drastically" wrong with Carver's critique.

Carver's major conclusions will first be summarized, and then several assumptions underlying his analysis and conclusions will be critically examined.

Summary of Carver's Evaluation

First, Carver claimed that a lack of internal consistency exists in matching DRP instructional level scores with textbook difficulty as indicated by a comparison of grade level median DRP scores for the DRP normative standardization sample with grade level designations for textbooks by publishers listed in several DRP publications. He therefore charged that the DRP test underestimates the reading ability of students relative to DRP units of text difficulty at early grade levels and overestimates their ability in relation to DRP units of text difficulty at higher grade levels. He interpreted his findings as proof that DRP test scores, unlike DRP readability units, are expressed on a scale characterized by an "... inherent inequality of measuring units." (p. 35)

Second, after rescaling both DRP instructional level reading ability scores and text readability estimates on a grade equivalent scale utilizing Rauding scale units, he found the same pattern of alleged internal inconsistency as indicated by the previous comparison of DRP scores and publishers' grade level designations. These findings were interpreted as further evidence for the alleged inequality of DRP test units of measurement.

Third, he cited what he regards as an unacceptably wide spread of DRP test scores between measurements of frustration, instructional, and independent reading levels for given raw scores on the test. These comparisons were based upon data from both DRP publications and his rescaled grade equivalent data and were also cited in support of his charge that DRP measurement units are unequal and hence the test is invalid for matching readers with materials.

Several unstated assumptions underlie Carver's critique. The acceptability of his statistical analyses and conclusions are contingent upon them. The assumptions are as follows:

A. The DRP test measures the same construct of reading comprehension that is used by textbook publishers in determining grade placement.

B. The proper DRP score to be used in the process of textbook selection for classroom use is always the instructional level score.

C. Degrees of Reading Power readability values are intended to be used in textbook selection for the purpose of matching the difficulty of materials with the reading ability of individual students without considering other characteristics of readers or texts.

D. Comprehension criteria for determining frustration, instructional, and independent reading levels are operationally defined in the same way by the DRP testing system as by informal reading inventories.

If the writer could accept these assumptions, he might be inclined to agree with Carver's conclusions. Given these basic presuppositions, his critique has a certain misleading "face validity." However, these presuppositions are not only theoretically and methodologically incorrect, but are also responsible for his highly questionable critical evaluations of the DRP test.

By attempting to bolster his conclusions regarding the alleged invalidity of DRP tests by using data from both DRP publications and his rescaled grade level DRP values, Carver has created a false impression of enhanced validity through converging evidence from different sources. This false impression is due to the fact that the rescaling procedure produces grade level readability values based upon his own Rauding Scale (1976). Since the grade level difficulties on his Rauding scale are anchored to books actually used in the schools at various grade levels (r =.87) (Carver, 1985), Rauding values must be strongly correlated with publishers' grade level designations. In fact, he reports that Rauding values correlate more highly with the grade levels for book usage than do readability formulas. If so, his rescaled evidence adds nothing new in support of his previous conclusions which were also based upon publishers' grade level designations. Indeed, if the use of Rauding scale values for his analysis did not yield evidence essentially similar to his other results, they would call into question the validity of his Rauding scale. Although the rescaled DRP results allowed him to present his case in the form of rather dramatic graphic displays, these results are simply redundant expressions of the same comparisons between DRP test and readability values with publishers' grade level designations that were made in other portions of his paper. As such, all analyses of data based upon his rescaled comparisons contained the same inherent deficiencies as his other data analyses.

Assumption A. Although the DRP test was designed to make predictions concerning the most difficult texts that a given reader can be expected to read with understanding, paradoxically this test measures a somewhat different construct of reading than that held by textbook publishers and many teachers of reading. To quote Bormuth (1985, p. 43), "The degrees of Reading Power test and its accompanying formula are state of the art instruments. They embody virtually every improvement that has been shown to help in matching readers with materials." In his response to Carver's article, Bormuth may not have realized fully the implications of this remark as it applies to Carver's thesis. The writer maintains that the alleged mismatches which Carver cites as evidence of invalidity are, on the contrary, desirable and expected outcomes, given the "state of the art" quality of DRP technology as applied to the construct of reading embodied in DRP theory and operationally defined in the DRP test. Carver's failure to understand the DRP reading comprehension construct represents the basic and pervasive fallacy underlying his entire critical attack.

Reading comprehension may be said to involve both the "processing" and the "utilization" of information extracted from text. These are different but related constructs. Various reading comprehension tests may measure different combinations of information processing and utilization; thus they measure different constructs of reading even though they are all called "comprehension" tests. Unlike most reading tests, the DRP test is purely a "process test." The test is designed to measure cognitive processes involved in reducing uncertainty while testing hypotheses through a continuous sequence of inferences about what semantic and syntactic information is most likely to follow at the surface level of the printed text. Thus, DRP test results are best interpreted as measures of more or less literal comprehension or "basic inference level" information processing from printed text. (Rankin, 1983, Rankin and Lacefield, 1985) (For a complete discussion of the DRP reading construct by the publisher, the reader is referred to the Degrees of Reading Power Technical Manual, in press).)

By contrast, other reading constructs are often defined in terms of the utilization of information extracted from text and retrieved from scripts stored in the reader's long term memory as a "product" of information processing. Various forms of information utilization might include providing literary interpretations, determining main ideas, inferring cause and effect, perceiving spatial or temporal relationships, following directions, detecting logical flaws, making applications to the solution of practical problems, etc. In this sense, reading becomes virtually synonymous with thinking and problem solving, made possible by the processing of textual information.

Many questions asked of students by reading teachers and many items found in most reading comprehension tests reflect this "reading as product" construct of reading; other questions asked by teachers and other items found in reading comprehension tests reflect the concept of reading as information processing. It is suggested that it is this loose, eclectic view of reading, which confounds both process and product, that is assumed in the decision making processes of both (a) book publishers in making grade level designations for texts, and (b) Rauding readability judges used by Carver in his rescaling procedure.

Unlike conventional reading comprehension tests which measure various forms of the previously defined eclectic concept of reading, the DRP test measures a relatively pure reading process construct as indicated by Rasch latent trait item calibration studies. (Degrees of Reading Power Technical Manual, in press.) The measurement of the reading process as one latent trait is attained in part by constructing items, the answers to which depend almost entirely upon information from the text uncontaminated by such variables as test taking skills (in making fine discriminations among multiple choice options), memory factors, and various abstract cognitive skills involved in information utilization. These characteristics together with an absence of time pressure also reduce the influence of reading speed and level of state anxiety upon test performance which often serve as confounding variables to reduce construct validity (Rankin and Lacefield, unpublished manuscript.) Such a test is capable of representing one constant latent trait from the lowest to the highest levels of proficiency on at least an equal interval scale and possibly a ratio scale. Since results of the Rasch item calibration for DRP tests are quite convincing, Carver's charge of unequal DRP measurement units is questionable.

Despite uniqueness of both testing methodology and reading construct, high correlations with other reading test results have been obtained for three reasons: (a) in addition to measuring information utilization, these other tests also measure information processing; (b) the ability to process information is a necessary but not a sufficient prerequisite for the utilization of text dependent information as measured by conventional tests; and (c) background knowledge is measured by other tests by both text related, scriptally implicit items (which can be answered from scripts stored in the readers long term memory), and items unrelated to text (which can be answered from scripts without having read the test passages). Responses to both types of questions are correlated with both information processing and information utilization skills as a general factor underlying all verbal tests. Thus, the DRP test may be considered as a uniquely different test in contrast to conventional reading tests despite relatively high correlations between them.

The DRP test not only measures a somewhat different construct but also it measures this construct consistently from the elementary school through the college level. Unlike conventional reading tests, the same rules for generating items apply from the easiest to the most difficult passages in the test, and readers at all age levels are given the same set of questions starting with the easiest paragraph and proceeding as far as they are able through the more difficult passages. For reasons yet to be given, it is the unique characteristic of the DRP test, as a constant measure of one latent trait reading process construct throughout a wide age/grade range, that produces what both Carver and Bormuth mistakenly view to be an undesirable tendency of DRP scores to underestimate reading instructional level comprehension of younger readers and overestimate reading comprehension of older readers in relation to publisher's grade level designations for books.

In a response to Carver's paper, Bormuth (1985) maintained that these mismatches are due to the fact that both the DRP test and readability values fail to reflect the influence of background knowledge upon reading comprehension. He correctly pointed out that young readers' background knowledge is greater than their skill for comprehending text and that the background knowledge of older readers is less well developed than their skill for comprehending text. Furthermore, Bormuth cited Dale and Chall (1948) and Chall (1958) to support the contention that all readability formula results display the same mismatch with reading ability at these age levels.

If Dale and Chall are correct, then it necessarily follows that DRP test results must also display the same mismatches with reading ability at different age levels as displayed by readability formulas, because the DRP test is specifically designed to predict results from Bormuth's readability formula with considerable accuracy. Just as the DRP test is a measure of information processing skill, all readability formulas measure surface level text factors which influence the processing of information from text relatively uninfluenced by the subject matter content of the text. However, contrary to Bormuth's contention, this does not justify the conclusion that the DRP tests are invalid for matching readers with books.

Bormuth's theoretical analysis of the relationship between the interaction of grade level and background knowledge and its influence upon reading comprehension is correct as it pertains to a "reading as product" reading construct but not to a "reading as process" construct. Information utilization is heavily dependent upon background knowledge. However, Bormuth's conclusions regarding DRP test validity are incorrect, perhaps because he did not realize that DRP test results were never intended to measure information utilization. He presumably believed that DRP technology shares an assumption in common with readability researchers, namely, "...the faith that, motivation being constant, readers' comprehension of materials is determined almost totally by the complexity of language in the materials and the readers' knowledge of the linguistic skills involved in reading." (p. 43) However, this "faith" is not shared by DRP test developers and is not reflected in the theory underlying DRP technology. Both the DRP test and the Bormuth formula can be said to measure reading as a process only. Therefore the relationship between DRP test scores and readability values, even when expressed on the same scale, cannot represent the relationship between test scores and publishers' grade levels at all grade levels. Neither publishers' grade level designations nor Rauding scale values representing the same variable are relevant criteria for studying DRP test validity. Therefore, the failure to predict such criteria can hardly be an indication of the inequality of DRP measuring units (i. e., the major technical thrust of Carver's critique.)

It follows that if the DRP test is a reasonably valid measure of information processing from text, the fact that DRP instructional level scores underestimate reading comprehension (i.e., reading as process and product) among young readers and overestimates reading comprehension (i.e., reading as process and product) for older readers, may be taken as evidence supporting its construct validity as a measure of reading as a process. If this were not true, the validity of the DRP test would indeed be in question. It could not be otherwise since DRP tests measure one constant processing trait which must interact with changing aspects of ability to utilize information in relation to changes in grade level curriculum expectations from early to higher levels.

In short, the writer maintains that the validity of the DRP test, qua test, as a process measure of factors involved in a readability formula throughout the age/grade range, is necessarily contingent upon the invalidity of DRP "instructional reading level" scores as predictors of publishers' grade level designations or Rauding readability values throughout the age/grade range. At this point the reader should not jump to the conclusion that the very "state of the art" nature of DRP technology puts it completely "out of sync" with publishers' estimates. As will be discussed in the following sections, the proper use of DRP test results is not limited to instructional reading levels, and furthermore, DRP test results are only part of a larger and more flexible decision making system than the mechanical matching of test and readability measurements.

Assumption B. Every one of Carver's examples of mismatches between readers and materials were based upon instruction level scores. Presumably he assumed that this reading level is appropriate for matching students with materials in all classrooms from elementary to high school levels without considering differences in curriculum demands and the amount of reading assistance provided by teachers.

Such practice is not at all consistent with the publisher's intentions. As stated in the DRP Readability Report (1985, p. 451), "...there is a tendency for reading specialists to talk about the instructional level as if there is only one optimal readability level that is sufficiently challenging to demand growth and at the same time sufficiently easy to ensure that, with effort, the reader will experience success. No such unitary standard exists. It is clear that the difficulty/success students are apt to experience depends upon many factors other than readability. Interest, the teaching activity, the amount of teacher support or aid to be provided, whether the reader is a beginner, the purpose for reading and other factors should be taken into account by teachers when making assignments."

Traditionally the instructional reading level has been used for selecting books that are sufficiently difficult that they cannot usually be read without assistance from the teacher. Therefore, it should be obvious that easier (i.e., independent level) materials should be the level of choice in classrooms where little if any reading assistance is provided.

Given sufficient motivation by the reader and help from teachers, there is no reason why frustration level materials should always be avoided for average readers or superior readers. In the writer's view, the term "frustration level" in DRP technology is particularly misleading, because, as will be discussed later, there are compelling reasons for using DRP frustration level materials under appropriate circumstances.

Given the nature of the DRP reading process construct, it is assumed that in a statistical sense, certain reading levels would be more appropriate for the average reader at some grade levels than others. The writer assumes that the wide range of reading abilities within most classrooms will necessitate the selection of materials at each of the three reading levels in matching materials with readers for various purposes. In making these assumptions, the writer does not question the accuracy of DRP reading levels for measuring reading as information processing.

However, it should be evident that DRP reading levels should not be expected to apply to other constructs of reading that neither DRP tests nor DRP readability values were designed to measure.

By using instructional level scores throughout his examples, Carver has created what appear to be mismatches between DRP scores and the difficulty of texts at the high school level (i.e., DRP instructional level scores are higher than text readability estimates by publishers). However, these mismatches would not be present if the more appropriate independent level scores were plotted instead of instructional level scores at higher educational levels. To use Carver's example, given the mean instructional level score of 76 for twelfth grade students and the fact that the average textbook published for students at this level is 64, it would appear that a mismatch exists. Note that the independent reading level for that same DRP score is only 65. Thus, what looks like a mismatch is due to Carver's use of an inappropriate reading level for the average high school student.

Since it is expected that DRP test results (as process measurements) must necessarily overestimate the ability to utilize information in solving cognitive problems related to text content by readers at higher grade levels, the use of independent reading levels in high school would result in the assignment of easier materials in keeping with their "reading as product" abilities. Thus the selfsame mismatch which is cited by Carver as evidence for DRP invalidity, when properly interpreted, simply provides additional justification for the flexible use of different DRP reading levels both within and between various grade levels in keeping with the intent of the test developers.

In the present writer's judgment, Carver's claim that DRP scores underestimate reading ability in relation to text difficulty for younger students is also based upon the misuse of instructional level scores. He provided several examples to support his contention that elementary school texts at various grade levels tend to have average DRP readability values more in keeping with the average frustration level reading skill of students at these grade levels than with their average instructional level skill. An examination by the present writer of a somewhat larger sample of published texts yielded results similar to Carver's. Assuming the accuracy of Carver's examples, a question still remains concerning their interpretation.

Do these mismatches reveal very poor reading by elementary school children, or grossly inaccurate grade level designations by publishers, or extremely invalid measurements by the DRP test? In the present writer's judgment, none of these alternative explanations is compelling from the standpoint of either logic or evidence. Rather the crux of the problem lies in Carver's misunderstanding of the nature of the reading construct being measured by the DRP test and his use of incorrect reading levels. If it is assumed that instructional level DRP scores underestimate the "reading as product" ability of elementary grade students, then it would follow that what is unfortunately called "frustration level" materials would not be so difficult after all, at least for average elementary school readers. That is, young readers whose reading utilization abilities are better developed than would be suggested by a measurement of their reading processing abilities could be expected to read frustration level materials with assistance from the classroom teacher, even though these materials would be quite appropriately labeled frustration level for information processing without assistance.

It is not only the text but also what is done with the text in the classroom that determines whether or not reading a book will be psychologically frustrating. Good teachers and good training materials vary the type and difficulty of questions to facilitate comprehension of relatively difficult reading material. Since young children have more reasoning ability and background knowledge than they have ability to process information from textbooks, a good elementary school reading teacher will help students to draw upon these relatively more well developed abilities by asking questions which enable students to use these abilities while extracting information from textbooks. Such questions might include a good many general scriptally implicit questions, that do not call for a high degree of specialized knowledge, and textually explicit questions, which can be answered by reference to literal information in the text. Well chosen questions allow young readers to read texts with teacher help which would be characterized as frustration level by the somewhat more difficult (for these children) textually implicit questions such as are used exclusively in the DRP test. (Textually implicit comprehension can be elicited by relatively literal text dependent questions, the answers to which depend upon a small degree of inference by the reader.)

The 50 percent probability of understanding associated with frustration level reading applies to reading as information processing but not to reading as information utilization. The fact that elementary school teachers everywhere are, without undue difficulty for the average reader, using books which are written at levels corresponding to the DRP frustration level, simply strengthens the case for using frustration level DRP values as one factor in matching students with books for the average student at these elementary levels despite the misleading connotations of the term "frustration."

A comparison of mid-instructional level DRP test means for grade levels 7-9 in the DRP Norms (1983) with a casual examination of readability values in the DRP Readability Report (1985), seems to reveal reasonably close matches. It is likely that within these grade levels, reader information processing skill is more comparable to their information utilization skill than at earlier or later ages. Consequently, DRP instructional level scores would be most often appropriate for matching books with students at these grade levels.

All comments in this section regarding the use of different DRP reading levels at various age/grade levels are to be interpreted only statistically in relation to the average reader at these grade levels. It is expected that the average DRP reading ability will vary widely between schools and between classrooms at every grade level. The proper use of DRP reading levels involves the tentative selection of books at different levels for various purposes within each classroom at every grade level upon the basis of more information than can be revealed by any test score or readability value alone.

In the light of the preceding analysis, it is evident that the flexible general use of different DRP reading levels, taking into consideration known reading process and reading product characteristics of students at various grade levels, is an intrinsic aspect of DRP technology. It follows that Carver's exclusive use of instructional levels was not only unjustified but contributed substantially to his unsubstantiated conclusions about inequality of measurement units to DRP test invalidity.

Assumption C. All of Carver's examples of discrepancies between DRP test scores and readability values apparently assume that the proper use of DRP technology is to assign books to students completely on the basis of the match between test scores and readability values. This is not now and has never been the intent of DRP test developers. Even a cursory reading of any edition of the DRP Readability Report should refute Carver's assumption.

The assignment of a textbook to a student based only upon a match between any reading test score and a readability value is much too simplistic. The DRP test developers recognize that even the best readability formula can only provide a general index of stylistic difficulty for prose passages. The term "readability" in DRP technology is completely a characteristic of printed materials; it does not change from one reader to another. It is not an interactional concept. Although readability is a stable characteristic of a book per se, the characteristics of readers choosing the same book are different. The matching of individual readers with individual books is a complex process that involves a number of factors in addition to reading ability. The DRP Readability report (1985) states,

> The Report can serve as an important aid in textbook evaluation and selection. Books can be chosen that will be suitably difficult for student use for various purposes, such as guided instruction or independent work. Of course, readability is not the only consideration in selecting a text. Attention must be paid to such matters as the accuracy and clarity of the concepts presented, the organization and style of writing, the interest and appeal of the material, the quality of the illustrations, and the size of the print (p.3).

In Reading, Thinking and Concept Development (1985), published by The College Board, the following advice is given by Klare:

> Readability estimates are best thought of as screening devices or...as probability estimates. If they are, users more likely will remember to use them only for tentative matching of materials to readers and be more willing to shift those materials around to the extent dictated by experience...Once placed, materials can be made easier or more challenging as, for example, interest, knowledge, or motivation levels permit (p. 251).

If DRP test scores were used as intended, then certainly no teacher would, as Carver suggests, assign first grade basal readers to fourth grade students or scientific research journals to high school students. Also, if Carver had used DRP scores together with other information in matching students with materials as intended by The College Board, his results would have been quite different. Therefore, DRP test validity as part of a broader decision making system, cannot be reasonably assessed by comparisons with Carver's test validity criteria.

Assumption D. The data in Carver's paper (Figure 2, p.39) is a good example of what general semanticists have called "maps to territories which do not exist." The quasi-fictional character of this figure displaying what purports to be an incredibly wide range in text readability values for readers at various grade levels stems from two misconceptions. First, Carver mistakenly believed that DRP reading levels are determined in the same way as informal reading inventories. Second, he failed to realize that, given the nature of DRP reading levels, frustration and independent level scores corresponding to a given instructional level cannot be translated into interpretable grade equivalent units.

Carver stated in his paper that, "The frustration level on the DRP is defined as the difficulty of passages on which 50% of the questions are answered correctly, and the independent level is the difficulty of passages on which 90% of the questions are answered correctly." Having made this technically incorrect interpretation of these terms (as they are operationally defined by the DRP test), he then shows what appear to be unacceptably large differences between DRP frustration, instructional, and independent level scores.

The DRP User's Manual (1980, p.7) clearly states that although these three reading level scores have been defined this way historically, DRP technology uses a different method. It states, "An alternative way of stating these definitions is that the independent, instructional and frustration levels are, respectively, those prose readability levels at which test items would be answered with a .90, .75 and .50 likelihood of success." As discussed in the same manual, the "alternative way" of defining these terms does not merely translate the percentage of items answered correctly into probability statements. Instead, the procedure involves using Rasch model item calibrations which take into consideration the interaction between item difficulties and ability levels of readers. Based upon the construct of comprehension operationalized by the DRP test, this technique permits predictions to be made of specific probabilities for passing items of x amount of difficulty by individuals with y amount of reading ability as measured by the DRP test.

From a psychometric viewpoint, this approach, based upon a large number of items measuring a common latent trait by a large sample of readers at different ability levels, is clearly superior to the highly questionable practice of interpreting percentages based on different comprehension tests of varying degrees of difficulty as done in the administration of informal reading inventories. In view of this difference between the way in which the reading levels are determined, it is possible that differences in DRP reading levels may well be greater than would be obtained with even the best informal reading inventories. If so the mere display of differences from what might be expected does not prove his contention that DRP measurement units are unequal.

However, Carver made a much more fundamental error. It is widely known that extreme grade equivalent scores for reading ability are virtually uninterpretable. For somewhat different reasons, so too are Carver's grade level translations of .50 and .90 reading levels corresponding to given instructional levels uninterpretable, particularly for very early and advanced grade levels. (Unlike the 50th percentile on standardized tests, a .50 DRP probability represents an extremely low comprehension level.) He failed to realize that DRP readability values can only be matched with the average reader at a given grade level if the conceptual difficulty and cognitive information utilization skills of such readers are in keeping with the content of the books and the demands of the curriculum.

Since DRP test scores predict only the results of a readability formula for a given book, test scores cannot be expected to reflect these other variables. As indicated by Rankin and Lacefield (1985).

It can be predicted that the average person in a group of readers with a mean DRP score of 70 will be able to comprehend those books with DRP values of 70 or below, provided that there is a correspondence between the content of individual books and the experience of individual readers. Given this correspondence, the level of readability can make a difference in determining the reading difficulty of a particular book for a particular reader. Without such a correspondence prior to reading, the readability level may have little impact upon comprehension (p. 387). It is obvious from Carver's examples that books published for widely different grade levels, comparable to .50 and .90 probability levels, would probably contain content of such vastly different conceptual difficulty that they could not be understood by the average student for whom the instructional level would be appropriate. To make such book assignments would represent a gross misuse of DRP technology.

For example, Carver's Figure 2 indicates that the instructional level for the average sixth grade reader is comparable to an independent reading level of about grade 2.5 and a frustration level of about grade 13. It is most unlikely that books covering such a wide range of grade levels with content suitable for the average sixth grader could exist. To take another of Carver's examples, a reader with an instructional level of 60 would have an independent level of 49 and a frustration level of 72. By making grade equivalent translations, he interpreted these differences to indicate frustration, instructional, and independent levels at the third, tenth, and college level, respectively. Books are not, and perhaps could not, be written with comparable conceptual difficulty over such a readability range for the average tenth grade student.

The fact that such hypothetical books may not exist demonstrates the weakness of Carver's grade level transformations, rather than deficiencies in DRP technology. As Bormuth (1985) pointed out, readability formulas and the DRP test were never intended to measure the influence of background knowledge upon comprehension. Therefore, although DRP scores alone should never be used in selecting books, this practice would be particularly inappropriate in selecting books covering an extremely wide range of grade levels for readers at a given instructional level. With the exception of some sets of materials designed for developmental reading classes, based upon simple concepts but written to cover a reasonably broad range of readability levels, few materials of this sort have been published. If more were published, to the extent that it is possible to write materials of comparable conceptual difficulty covering an extremely wide range of stylistic difficulty, there is no reason to believe that the DRP test would not be a valid measure of information processing ability required by these materials. To the extent that books of comparable conceptual difficulty can not be written at readability levels of difficulty which are extremely higher or lower than the grade level for which the books were intended, this simply represents reasonable limitations upon the use of information processing tests as the only basis for matching books with readers.

If the DRP test is used as intended, far fetched book assignments as represented in Carver's paper would, of course, never be made. If a test is a sample of items from one domain (i.e., information processing), it is quite illogical to evaluate it as if it were a sample from a different domain (i.e., information utilization). The probability values for each DRP reading level can only apply to the construct being measured by the test.

Because he failed to understand the nature of the DRP reading construct, the precise technical nature of DRP reading levels, and the inherent limitations of grade equivalent scores for extreme measures, he concluded that large differences among DRP reading levels prove the inequality of measurement units. Simply because a difference in the spread of scores exists in comparing DRP reading levels with what might be expected from the use of informal reading inventory levels does not ipso facto constitute proof that DRP reading levels are invalid. Whether or not they are is an empirical question to be settled by better evidence than a mere comparison between an old method (which is itself psychometrically questionable) and a new measurement procedure that utilizes a highly sophisticated technology applied to a different reading comprehension construct.

Summary and Conclusions

From the preceding response to Carver's critique, it is concluded that Carver failed to understand several unique characteristics of the DRP test in contrast to other reading tests: first the nature of the reading construct being measured; second, the constancy with which this construct is measured throughout the age/grade range; and third, the different operational definition of frustration, instructional, and independent reading levels used by this test. Having failed to understand these unique features, he then proceeded to plot hypothetical matchings of textbook readability scores with reading test scores based upon two additional false assumptions: (a) he used instructional level scores at levels where such usage would generally be inappropriate, and (b) he failed to realize that such matchings cannot be made without taking into consideration other information about both materials and readers.

Consequently, he proceeded to draw unwarranted conclusions based upon both the improper selection of texts in relation to publisher's grade levels and on comparable errors in his own rescaled grade equivalent readability levels. His rescaled DRP reading levels produced essentially uninterpretable data at the extremes. When his hypothetical data revealed differences from what would have been expected from IRI results, he erroneously concluded that the DRP test must be invalid because of inherent inequalities of measuring units.

If he had used the proper matching procedures advised by DRP manuals with actual students, his graphs showing matchings of readers with materials would have looked quite different. Carver simply failed to realize that the DRP technology is not just a test; it is a testing system. As such, it can only be used in combination with sound professional judgment. The test must be evaluated in the context of the total system in order for the evaluation to be meaningful.

In the writer's opinion, even if Carver had not made so many false assumptions in presenting his analysis, the mere display of different outcomes using a newly developed technology in contrast with conventional procedures does not constitute convincing proof of the invalidity of the new technology. In the last analysis, it must be the use of the DRP system in the classroom to investigate its effects upon variables such as improvement in student reading ability that will confirm or disconfirm the validity of the DRP test as part of the total Degrees of Reading Power system.

It should be stated that much of the information upon which the present paper is based has not been communicated to the public as well as might be desired. Much of it is scattered about among several DRP publications, and some of the best discussions of issues raised in this paper are to be found in later editions of DRP manuals and reports which were published only recently. The only complete discussion of DRP test theory is in the Technical Manual which is still in press. Perhaps Carver's critical attack, which was communicated to The College Board prior to it's publication, may have served one useful purpose--namely, to stimulate the test developers to communicate more fully and effectively the theory underlying this unique state of the art instrument together with helpful suggestions for it's flexible use in the classroom.

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CHARACTERISTICS OF EFFECTIVE INTERVENTION STRATEGIES FOR ENHANCING ACADEMIC PERFORMANCE

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ABSTRACT

The issue of academic preparedness of entering college students is as old as higher education. Effective responses have been difficult to identify and even more difficult to document empirically. In this presentation the author reviews the conclusions of research on the characteristics of effective intervention and classifies programs in terms of these criteria. The paper ends with a discussion of practical problems associated with implementation.

BACKGROUND OF THE PROBLEM

The issue of academic preparedness of entering college students is as old as higher education. Effective responses to differences in student readiness are not easily formulated because they pose a dilemma; on the one hand an institution's most precious asset is public confidence. If it should appear to dilute its academic standards that confidence would be put into jeopardy. On the other hand, higher education has traditionally been committed to providing educational opportunity to the largest number of students possible. To fail in this aspect of its mission would result in a proportional loss of credibility and support of society.

One solution is to set admission standards such that only the most able are enrolled. This would assume that admitting students with academic deficiencies necessarily dilutes the quality of education provided and is reflected in a lowering of the quality of its graduates. It also implies a belief that "once deficient always deficient" and violates the principle of providing educational opportunities to the greatest number possible. The possibility that such a policy would be unjust to students who may have deficiencies through no fault of their own but because of an inferior early education is not considered.

In the 1800's preparatory schools were established to supply the needed academic background and a similar expedient was later adopted by most public institutions in the form of remedial or developmental education programs in the interest of efficiency and reduced cost. But the problem remains.

More recently reduced birth rates have stimulated competition for students among institutions and has resulted in giving students unprecedented power over both the curriculum and academic standards. Faced with financial constraints, only courses popular enough to be economically viable can be offered and course popularity can often be adversely affected by academic stringency. When a college degree is viewed as a collection of credits, any one of which is equal to any other, the less demanding options become increasingly attractive to underprepared students who represent an increasing percentage of the students enrolled. By exerting such power over the curriculum through their enrollment preferences, these students constitute an indirect but powerful force adapting the curriculum and academic standards to their level of competency rather than the requirements of high quality educational achievement. The institution and its social responsibility to insure intellectual excellence are given short rift. Compelled to choose between academic quality and retention, institutions are pressured to make short-termed pragmatic decisions with the result that abuses of integrity in the conduct of education are widespread. (Carnegie Council 1979, 80; Levine, 1980). To maintain enrollments, colleges recruit aggressively by reducing admission standards or allowing students to circumvent traditional academic requirements (Cross 1979; Manzo 1979).

Further evidence of the loss of credibility is found in student cynicism regarding academic achievement (Levine, 1980, p66; Wellborn, 1980). Cross (1976) and Simons et al. (1979) have documented the fact that faculty members feel unprepared to cope with the extreme diversity of student ability in their classes and resent the conditions they must endure in today's educational environment. Loss of public confidence, (Carnegie Council 1980) student cynicism cited above, and faculty dissatisfaction are cumulative in their impact on higher education and constitute serious indictments of the present situation.

COPING WITH THE PROBLEM

Findings of the Carnegie Foundation (1977), the Carnegie Council (1979, 1980), and Levine (1980), all concur in the opinion that the improvement of instruction is the most urgent need of colleges and universities today. The only way many students currently being admitted to college can succeed in an academic program of integrity in sufficient numbers to insure the survival of many institutions and programs is to improve the quality of learning for those who are admitted. The establishment of learning improvement programs has become the universal response to this challenge.

Learning improvement programs may be classified as either remedial, when designed to eliminate academic deficiencies, or developmental, when designed to intervene with appropriate learning at the time need is felt. Both types of programs are intended to improve grade point average and thereby retention. Such programs are being established in colleges at a rate faster than any other type of course according to Magarrell, (1981, p. 1), but they are not seen as meeting the challenge very effectively. Published evaluations of programs are mixed, and attitudes toward them among the faculty of instruction tend to be disparaging (Richardson et al. 1981; Grant and Hoeber 1978; Rouche and Snow 1977).

Evaluations of such programs is flawed by the general acceptance of a number of unfortunate research assumptions and practices (Keimig 1983, p.2). Perhaps the most common difficulty consists in inappropriately using GPA and retention as data to evaluate the effectiveness of participation in a remedial program. Both GPA and retention are dependent on a variety of interacting factors. To argue that a single course can compensate for all of them, in a relatively short period of time, is unreasonable. A course might be able to lay the foundations for the needed growth or supply the needed orientation or develop the antecedent skills needed for success in certain areas, but these effects may not become apparent in the period of a few weeks or months and certainly would not impact on GPA significantly in a single semester under present grading practices.

A second source of ambiguity in the evaluation of assistance programs arises from averaging and statistically manipulating quantitative outcomes from various kinds of programs in an effort to reach general conclusions regarding their effectiveness. Unless qualitative differences between programs are taken into account, valid generalizations are impossible. The absence of consistant use of terminology in identifying goals, methods, and structures also makes the comparison and understanding of research findings exceptionally difficult. A final source of difficulty in evaluation arises from the omission of relevant institutional factors in the cause-effect analysis. Important realities are obscured when all effects observed are attributed to the single program being evaluated (Keimig, 1983, p.2).

Nonetheless, research focused on qualitative analysis of effective programs has identified specific practices which do make positive contributions to improved GPA and retention. Such research is of great value planning learning improvement programs.

Keimig (1983) has developed a practical means of presenting the practices shown by research to result in more effective programs in a "Decision Guide for Effective Programs". Her guide makes provision for variables not generally considered in the development, administration and evaluation of programs, and prescribes that all remedial or developmental assistance offered must accommodate itself to those variables to be effective. A brief summary of the hierarchy or types of learning improvement programs described in this guide is in order.

For Keimig (1983), in her Decision Guide, two inseparable values underly the rankings of programs:

1) their demonstrated potential for improving learning in the overall academic curriculum and
2) their potential for bringing about more responsive teaching methods in academic courses.

Keimig (Keimig 1983, p.20 ff.), believes that the organizational structure of the learning improvement program either extends or limits its effect on academic achievement and retention more than any other single characteristic of the program. Using the mechanisms that make this statement true as her criteria she classifies programs into four types differentiated by the extent to which they provide support services adapted to student needs as part of the regular academic curriculum.

In Keimig's hierarchy, higher level programs include the structures of all lower level programs and add certain features which facilitate greater comprehensiveness and institutionalization. The hierarchy of programs moves, in four classifications, from low to high potential for improved learning and instructional change.

Level One

The lowest level is referred to as "remedial courses". Historically, this has been the most widely used. It is based on two assumptions;

1) that academic growth is hindered by some deficit which interferes with learning and when it is overcome the student will succeed
2) the necessary skills such as reading,

> problem solving, etc., can be developed as generic skills in isolation and students automatically transfer them to appropriate academic coursework as needed.

Regrettably, neither assumption is supported by research. Their survival is due to the persistence of a penchant for taxonomic models espoused by behaviorist psychology, the needs of test construction theory, and the influence of both of these on current pedagogy. Remedial skills courses are ranked lowest in the hierarchy because they are least likely to affect long term academic achievement and because they are also least likely to foster improvement of the general learning environment of the academic curriculum.

Level Two

Level two includes programs offering individualized learning assistance services. This assistance is based on three premises;

1) since the student has the problem, only the student can resolve it;
2) deficiencies can be overcome through independent study and tutorial assistance;
3) poor self-concept and poor study skills are ameleorated through individual attention. (Keimig 1983, p. 22).

This approach has certain advantages over level one programs. Students do receive direct help with course work and considerable social and psychological support accompanies the instruction. These elements combined with instruction in basic skills increase the likelihood that student needs will be met and learning will improve. As classroom teachers receive feedback in the form of improved student performance, they will tend to create a more responsive classroom environment.

As a total program, however, level two structures are not effective. Research indicates that tutorial assistance to individuals is unsuccessful in producing student growth because it fails to address the real weaknesses in knowledge and skills which are at the root of the problem. (Cross 1976).

Keimig (Keimig 1983, p. 23) argues that this type of service falls short because;

1) it is not systematic,
2) it is usually too little too late,
3) it is provided after failure has occurred and cannot be preventive,
4) it is not used by those who need it most (Grant and Hoeber 1978).

Level Three

Level three programs offer course-related learning support services. It is distinguished by the systematic coordination of developmental objectives and activities into academic course assignments in Keimig's classification. In this arrangement, all students in a given course can participate in supplementary learning activities. They are based on the assumption that it is the school's responsibility to provide whatever instruction is required to bridge the gap between student skill and the entry level mastery required by the course (Keimig 1983, p. 23). It is particularly significant that the provision for individual student learning needs is included because of the structure, objectives, and content of the course, not because of student skill deficiencies. The supportive program is available to all students, because opportunities for review, reinforcement, and necessary reteaching, are integrated into the general course requirements. Mastery learning technology which allows students to practice and study until a satisfactory level of mastery is reached is well adapted to this level of program (Keimig 1983, p. 23). It is also the most effective single developmental component for achieving academic success with underprepared college students (Cross 1976). The link to specific academic courses distinguishes this level from the general learning center model.

Level Four

Keimig refers to level four programs as Comprehensive Learning Systems (Keimig 1983, p.24). These differ, "both in scope and precept from lower level programs" (Keimig 1983, p. 24) by providing for the total learning needs of all students. Rather than unloading information on an unknown audience, a level four instructor incorporates a variety of resources and techniques to insure student involvement and commitment to learn.

Level four programs are developed on the assumption that "the total educational experience within the course should be systematically designed according to the principles of learning theory." (Keimig P. 24) Such a program will make provision for interpersonal and effective needs as well as the cognitive and skills aspects of course requirements. Keimig discusses the design of such instruction as embodying several important concepts:

> "Colleges can be educationally effective only if they reach students where they are, only if learning is made relevant to students' central concerns, and only if three personal competencies (intellectual competence, physical-manual skills, and interpersonal competence) are developed as part of a whole (Chickering 1969). Time, rather than achievement, should be the variable in education. Students differ in the amount of time needed for learning; by increasing time needed for learning; by increasing time spent on a task, students can learn a given content to a specified criteria (Grant et al. 1979)." (Keimig 1983, p. 25).

Such comprehensive programs represent the highest level of her hierarchy because Keimig believes they are most likely to improve student learning and affect change in academic instruction. She argues that:

> "Comprehensive programs are best evolved out of the experiences derived from lower level programs for three reasons: 1) the lower level support components must be in place to provide auxiliary learning experiences for the courses; 2) the experience that developmental and regular instructors obtain in implementing lower level services provides planners with the knowledge and confidence they need to establish comprehensive systems; 3)continued, quiet, incremental change is more likely to occur and be accepted than massive reforms undertaken all at once (Levine 1978, p. 420)."

Few institutions provide level four assistance programs because of the necessity of involving the teaching faculty as a whole in a program foreign to their traditional practices. Exegencies of the sort mentioned at the beginning of this discussion, however, are bringing pressure to bear which will accelerate the quiet, incremental change Levine refers to as occurring wherever assistance programs are in operation at lower levels.

PROGRAM APPLICATIONS

Granting the importance of the institutional organization in the effectiveness of intervention strategies, the present discussion is concerned with the actual content of these programs. The present discussion will focus on reading skills and the nature of the intervention required to enable students having deficient reading skills to cope with their academic work.

One factor often overlooked in the improvement of reading skills is the fact that "reading" is a verb, an action, and it is performed on specific material. Because of this, reading skills are a function of the material being read. Since reading is done for a purpose, it is also a function of that purpose. Too frequently the student's reading purpose is narrowly focused on the acquisition of information in the mistaken belief that acquiring knowledge is the sole purpose of study, overlooking the understanding and mental development which constitute the fundamental purpose of the entire educational enterprise. This is no doubt fostered by the fact that the student gives evidence of mastery of course work in terms of correctness of test question response. With the correctness of the response as the criteria, information gathering becomes the name of the game.

The information gathering orientation of study and textbook reading is pivotal to many reading problems and ineffective study habits. Effective learning requires association of the material to be acquired with that already possessed. This is achieved most readily through the agency of questions because they provide the active mind-set, associative matrix, and specificity of purpose required for understanding or comprehension. What is understood does not require special effort to remember because it can be reconstructed as required from contextual clues and data presented by the problem situation.

Most examinations, being of the objective type, do not place nearly so much emphasis on recollection as on recognition and discrimination skills. The correct answer is provided with the test item, but the reader must discriminate between the choices to select the best response. Test taking skills center on thinking processes, not remembering processes.

One characteristic of low-ability students appears to be the concrete orientation of their thought processes. They find the formation of abstractions difficult and focus on learning the right answer rather than on the process by which the answer is attained. They become confused by complexity because they fail to identify the central problem and follow systematic procedures or problem solving strategies as organizational aids. They fail to employ their reasoning ability during evaluation depending instead on memorizing information which they are frequently unable to use in different contexts.

Possibly fifty percent of college freshmen are concrete thinkers in the sense of the Piagetian model. Though reasoning abilities may follow the same sequence of development in all persons, it is far from certain that all adults reach the formal operations stage (Killian 1980). To what degree teaching intervention can affect operational levels is largely unknown, nor has what actually constitutes the formal operations level in areas such as history, literature, etc. been clearly defined. The best current option is to make provision for various levels in the instructional program itself. The critical issue is that mental operations must be developed using actual course materials to be meaningful.

In practice, remedial courses can provide exercises in generic reasoning skills such as factual analysis, classification, visualization, time and order sequence, summarization, cause-effect relationships, reason-consequence, premise-conclusion, serial order, and the range of operations subsumed under the caption of critical reading, but these must be applied in actual course relevant experiences before there can be any assurance that they will be transferred.

Instruction in reading comprehension promises to change radically as a result of research findings on comprehension, and comprehension instruction conducted from a variety of new perspectives. The Center for the Study of Reading, in particular, has articulated a research based theory of reading instruction which is already having an impact. It espouses four tenets:

1. The mature reader derives information more or less simultaneously from many levels of analysis.
2. Reading is an interactive process; analysis does not proceed in a strict order from basic perceptual units through to overall interpretation of text.
3. Reading is a constructive process. The text is an abbreviated recipe from which the reader elaborates meaning.
4. Reading is a strategic process. Readers continuously monitor their comprehension and selectively allocate attention to difficult sections as they progressively refine their interpretation of the text. (Duffy, Roehler and Mason 1984, p5 ff).

Such a framework offers many applications relating to the nature of text, cognitive processes, and the interaction between reader and text which have not received the attention they merit so far.

The difficulties of earlier writers, from Huey in 1908 onwards, resulted from being misled into isolating and practicing skill-based reading activities instead of attending to student's background of knowledge and providing opportunities for expanding, understanding, interpreting, and evaluating written information. Barrett, for example, modified Bloom's Toxonomy into a construct of thirty-three cognitive and effective dimensions of reading comprehension (Clymer 1968).

> "The most significant aspect of this new conception of the reading process lies with its impact on comprehension instruction. The description of comprehension...is much more representative of the complex interaction between reader and text than the static list of skills and abilities which typically represented descriptions of comprehension in the past." (Duffey, Roehler and Mason 1984, p. 36).

It is not difficult to incorporate such a view of comprehension into an instructional framework consistent with the hierarchy of learning improvement programs discussed. Successful programs integrate academic courses and remedial or support services. This arrangement supplies motivational variables because supplementary instruction using textbook material is rewarded in the academic classroom in the form of understanding and grade improvement. Provision for transfer of skill development is insured because the practice material itself is drawn from actual course work.

In this approach, the skills taught are identified, not through formal testing procedures, but informally from the examination of problems met in attempting to master course work. Such a procedure takes advantage of the important principle of supplying instruction at the moment of felt need, when readiness for learning is at its maximum.

For low achieving students, inclined toward concrete thinking, the minimum of abstraction is required in learning because the problem situation is always specific and clearly defined. Instructional energy is directed to a specified end and, when necessary, the problem is divided into units comprehensible to the student. Through the accumulation of concrete experiences, chances are improved that more abstract levels of thought become possible. Such teaching not only solves immediate problems, but builds the foundations for more advanced thought processes. The question of relevance, so often raised as an objection by skill deficient students working with skill building exercises divorced from classroom problems, never arises.

Under such conditions, a formal toxonomy of comprehension skills to be mastered is unnecessary. Arguments that such an approach does not provide for a systematic development of the total range of skills one might need can be answered by observing that the continued use of the proposed approach would, over time, meet that need much more effectively because skills would be taught and learned as needed by the student. Emphasis, in this paradigme, is on teaching the needs rather than the need to teach.

In the approach recommended, what is taught depends on the close monitoring of the student's progress in the academic program. In a level four program, this is done both by the learning center staff and classroom teacher. In other cases this responsibility falls more directly upon the learning center staff. This explains the importance of the counseling and advising component in a successful intervention system. Deficient students are frequently handicapped to some degree by low self-esteem which lowers their level of aspiration and impacts on their motivational level rendering instruction less effective.

The process of monitoring student progress in the academic program fosters the development of close personal relations between student and teacher. This rapport is based on the student's perception that the teacher has a personal interest in the problems being faced in the classroom and is in a position to provide meaningful assistance and support. Such a relationship reduces the feelings of alienation and isolation felt by unsuccessful students and has a positive effect on both self-concept and motivation.

Through the process of transference, the student becomes better disposed to the entire academic environment and the demands made by the academic discipline around which the program revolves. In such a relationship the instructor gains a comprehensive understanding of the student and can effectively refer the student to other services for the solution of problems of a more personal or medical nature. The net result is improved academic performance, maximization of the rate of personal development and decreased attrition.

There yet remains a question regarding the role of standard texts on reading improvement in meeting skill needs. In certain situations the skills needed to comprehend a textbook requires reinforcement beyond that afforded by the isolated instance encountered in the textbook. In such cases reference to reading improvement texts are useful for individualized supplemental instruction. For example, a student who reads too slowly to keep pace with the course work would benefit from rate improvement training. It is entirely appropriate to adopt a rate improvement text to provide the necessary training but this instruction must make specific provision for the transfer of the skill being acquired to the reading materials being used in the academic classroom.

The most fundamental guide for the student in efforts to improve reading skills can be summed up in the statement: "If you don't know what you are supposed to learn before you read, you won't know whether you have learned it when you finish." Setting a reading purpose is the most effective strategy the student can use to set personal criteria for effectiveness. The teaching must bring the student to a high level of skill in setting a personal reading purpose if there is to be any realistic hope of developing a mature, independent, efficient, reader and learner. Developing such skill, therefore, is a primary learning goal in reading improvement programs.

The degree of skill to be acquired is a direct function of the material to which the skill will be applied. In the example being discussed, the reading rate skills developed in isolated practice in the rate improvement text should be transferred to academic reading by maintaining parallel records in the academic reading being done. If the reading rate for a given lesson is 200 wpm in the training program, a similar rate should be attempted in the academic reading material the student is using. In this case, skill transfer may run into difficulty when the training program advances the student to reading rates which are inappropriate to the academic reading task. As reading rates approach 500 wpm, for example, they may be suited to reading less demanding materials but would usually be inappropriate for academic reading. At this point flexibility of rate should become the learning objective by teaching the student to adapt reading rate to particular reading purposes.

Some skills by their nature seem to transcend subject matter specialties and suggest that the practice of supplying skill training as the need is met in a course would not provide a satisfactory solution. An example of such would be vocabulary development. Without an adequate vocabulary, textbook reading itself becomes such an overwhelming problem that academic content is impossible to master. Such a situation, of course, should not be found at the college level to the extreme degree suggested. Nonetheless, vocabulary deficiencies of some sort are quite common among college students and are often severe enough to justify a special improvement program. Again, the principle of course relevance is crucial. The use of vocabulary development texts will be effective in direct proportion to the degree to which the terms studied are applied in daily communication or academic needs. Therefore, great stress should be placed on contextual clues and word parts because these aspects lend themselves most readily to transfer of learning. An effective vocabulary improvement program should sensitize the student to vocabulary in the reading and listening situations of everyday life.

The common element in the program and instructional suggestions and program being discussed is the development of the student's skill in learning to learn. What is learned is important not only for the content of the discipline being acquired but for the special type of mental growth it fosters. It is the cognitive development which accompanies mastery of academic learning that enables the mature scholar to continue personal growth and contribute to the development of a discipline.

Concern over the level of skill required to succeed in various courses is another aspect of program development that merits discussion. It often happens that students are taught skills in isolation which are not transferred to life situations because they are not mastered to a degree appropriate to the situation in which they must be used. It is possible for a student to feel satisfied that some mathematical procedure is clearly understood in class only to find that it makes no sense at all the same evening when doing an assignment. Something analogous occurs in much skill learning. A student who appears able to identify a deductive reasoning processes in practice exercises completely fails to recognize it in the context of an academic reading assignment. The opportunity to apply new skills to course material where it is used must be provided for in all cases where isolated drill or explanation is used.

A comment on testing and grading practices in relation to academic assistance programs is in order. In cases where there is a direct relation between the assistance and academic programs, the grades achieved in the academic courses are the best indication of the success of the assistance program because the purpose of such assistance is the improvement of GPA. In cases of isolated training efforts, where transfer is not closely monitored, grading is much less meaningful and variables such as promptness, percent of correct responses, quality of work, etc. could be taken into account for grading. But there is always a danger that, in order to be supportive of the student, grade inflation might occur. To the extent that such inflation represents student cooperation, no great harm is done, but if faculty interprets the inflated grade as improvement in level of readiness for academic instruction, considerable harm can result both to the student who will fail the academic program, and the credibility of the skills program in the eyes of the faculty. For this reason it is far superior to tie skill improvement grades, as far as possible, to specific academic courses. The practice of pass/fail grades in the skills program can be arranged so that to pass the skills course, the student must also pass the academic course with which it is associated. In this case, the seriousness of the skills program will be impressed on the teacher and student alike and increase the likelihood of dedicated application and persistence.

Though the needs of the underprepared student are complex, the motivational aspects are perhaps fundamental to all others, and they are best developed through a skills improvement program closely tied to a specific content area. In such situations needs are identified which require immediate attention and which will be immediately reinforced as they are remedied. By close monitoring of classroom activities, the teacher receives timely and reliable feedback on the effectiveness of the skills program and is able to supply ancillary assistance in areas like time management, career planning, goal setting, notetaking and classroom behaviors, improvement of concentration, memory improvement, test taking techniques, review skills, problem solving techniques and any of the other common difficulties students meet in adjusting to the demands of college life, as they become useful in facilitating student progress.

Program management incorporating the sorts of suggestions mentioned will more effectively meet the challenge of higher education for maintaining high academic standards and providing educational opportunities for the greatest number, without jeopardizing professional integrity or the confidence of society. Over a period of time there is promise that it will facilitate the sorts of modifications in the curriculum and teaching practices required to insure the fullest development of the potential of each student it elects to serve. Research has been able to identify those variables in assistance programs which produce the desired results. It is up to leaders in education to incorporate those findings into the planning, organization and administration of higher education and give reality to the promise they envision.

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DEVELOPING SELF-SUPPORTING PROGRAMS TO OFFSET A DECLINING BUDGET

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ABSTRACT

In a one industry state the consequences of a recession are felt quickly in tax supported colleges and universities. Budget allocations are frozen but during an inflationary period fixed costs escalate, resulting in unmet needs. At U of M, a Five Year Plan has cut all units 15%, with the annual cut varying between 3-13%; especially hard hit are those units not directly involved in credit hour instruction.

The Reading and Learning Skills Center (RLSC), unable to offer a credit course, of necessity became a "user fee" based unit. Through an escalating user charge, we were able to balance our budget until continued tuition increases resulted in decreased enrollments.

A point was reached at which new sources or funding became necessary. Grants would take a year or more and were uncertain. The most reasonable and rapid solutions included:

1. bringing in outside money from business and industry.
2. finding money inside the University for needed programs; or
3. a combination.

The decision was made to convince schools or colleges within the University to support their own students with some funding for special programs. We began with one special program. Currently there are six special programs, three offered at given intervals and one pending. The staff has expanded to handle both the larger load and increased diversity. If additional needed adjustments should be required we will resort to a very careful scheduling of staff and programs.

In a one-industry state such as Michigan (automobiles), the consequences of a recession are felt quickly, especially by tax supported colleges and universities. When budget allocations from the state are not increased during an inflationary period fixed costs escalate, resulting in unmet educational needs. Regent-approved tuition increases have been used primarily to support instructional objectives and improve faculty salaries. At The University of Michigan, a Five Year Plan cut all units 15% over the total period, with an annual cut varying between 3-13%; especially hard hit have been those units not directly involved in credit hour instruction.

The Reading and Learning Skills Center (RLSC), offering a non-credit course, was soon faced with a combination of decreasing general funds income and inflation-increased expenditures. Of necessity, RLSC became a "user fee" based unit. Through escalating user charges, we were able to balance our budget each year until continued tuition increases resulted in decreasing RLSC student registrations.

At this point, we recognized that new ways must be found to survive, i.e., to cover expenditures. Additional efforts, such as writing proposals for grant money, would take a year or more with no certainty that we would receive an award. To decrease staff meant decreasing either quality and/or quantity of service. The most reasonable and quick alternatives included the following:

1. bringing in outside money from business and industry;
2. finding money inside the University to fund needed programs;
3. locating small foundations which take less time to award grants; or
4. a combination of the above.
5. Long range planning included responding to government requests for proposals as well as trying for the unsolicited category.

Even though the Administration suggested that we design courses and workshops for business and industry, the decision was made that it would be sensible to use the RLSC Staff's skills to guide University student improvement. To do this, we needed to convince schools or colleges within the University to support their own students by funding our specially designed programs, e.g., one such special program we developed for the Graduate School of Business Administration used The Wall Street Journal, Business Week, The Economist, as well as professional journals, and texts to implement skimming and scanning exercises, and study reading.

The RLSC Staff has learned some successful ways and times to present proposals. Significantly, we have also had achievement data and testimonials to offer which enhance a positive response to a proposal. We started with one special program; currently, we have ten. There are six on-going special programs, three that are given at intervals and one that is pending. The staff has been expanded to handle both the larger load as well as increased diversity. Another imminent budget cut means an additional adjustment, which we will handle through careful scheduling of staff, and the creation of new programs.

The group objectives set to stimulate action toward meeting our goals have been as follows:

1) Target two areas.
2) Begin surveys within (targeted) University schools, colleges, and departments to identify where needs for our services exist and where funds are available.
3) Contact (target) administrative officers/ Deans to discuss benefits of a program developed specifically for their students, e.g. those on probation, minority "at risk" students or students prparing for prelims, etc.. If there is adequate interest, suggest a meeting of concerned faculty.
4) Prepare for the meeting with those faculty members and other concerned individuals selected:
    a) Demonstrate the RLSC benefits available to the unit through the kinds of changes that produce data on performance improvement. Graphs and charts provide data that cannot be ignored by those seeking positive performance change.
    b) Relate or show on-going innovative activities, e.g. phasing in of the computer to assist students toward better grades. One such procedure is improving student-assigned papers through the use of a word processor.

    c) Demonstrate the implementation of field relevant material in practical exer-

cises.
    d) Ask for an affirmative decision or a date for a decision. Inquire if the Dean/Program Coordinator, etc. would prefer Fall I, or would Fall II be acceptable.
    e) Provide a fee schedule with the suggestion that fees vary with the type of program, location, length, range of topics covered, etc.
5) Client Decision on Program
    a) If no, select another program target.
    b) If yes, set a planning meeting with staff.
        1) Request information on the number of possible participants, location of program, which type of program is desired, etc.
        2) Request information on any special problems, e.g. retention, comprehension, general high stress, test anxiety, study skill deficits, concentration difficulties or lack of self-confidence, etc.
        3) Design program.
            a) Program personnel decide staff based on individual interests and responsibilities.
            b) Discuss assessment, where to locate classes, special types of materials required, how many materials are needed, arrange for selection or preparation, duplication, etc.
            c) Program schedule set with coordinator.
            d) Conduct programs.
                1. Check with coordinator at intervals to pick up potential problems.
            e) Program results prepared on computer, with copies to the Dean and Coordinator.

c) Types of Programs
   1) School of Public Health
   2) N.R.O.T.C.
   3) Residence Hall Program
   4) Pharmacy (at intervals)
   5) Nursing (at intervals)
   6) Athletic
   7) School of Education (testing of incoming freshpersons)
   8) Graduate School of Business Administration
   9) School of Engineering
   10) Comprehensive Study Program
   11) Dental School
   12) Special Projects

"Getting" a program takes special kinds of skills. One does need to develop an understanding of administrators' interests and needs as well as how to indicate that what is being offered will indeed fill those requirements. One must learn where there is money for special programs. The timing of a proposal presentation is an extremely important factor toward achieving acceptance. If negotiations start in the late fall, or winter, or early spring, there is a reasonable chance of agreements being reached before budget allocations have been completed. Time must be allowed for identifying needs, exchanges of information, agreement as to needs, planning specific objectives and how these will be achieved with a particular group, etc. All these must be considered to reach a contract.

"Keeping" a program requires more than knowing how to fulfill the program objectives as outlined earlier. There are some crucial ingredients, some quite small and seemingly insignificant; yet any one of these, when neglected or overlooked, can be the source of losing a program. Some of the crucial "little" ingredients to Program Coordinators are as follows:

1. Memos to confirm, which avoid misunderstanding.
2. Phone calls to clarify quickly, or cor-

rect. In one instance, a memo was returned with the class hours changed, without checking as to the instructor availability.

3. Memos to keep the action moving can be initiated by the Program Coordinator. Noting dates coming up, or a phone call or appreciation may precipitate a decision on the type of program that would be needed.
4. Memos to inform of a change, avoid problems, and discomfort to all concerned. For example, to know in advance that the number of participants would be 427 instead of 348, allows preparation of adequate materials.
5. Prompt reports to communicate progress results is greatly appreciated by Deans and Coordinators. It also facilitates renewal of a contract.

The where a program will take place is almost always there, even for extra dollars. At this point, Schools and department officials have expressed preference that programs be held in their buildings.

Through creative effort the RLSC staff has been able to maintain quality services and inaugurate innovative new opportunities under conditions which common wisdom would predict retrenchment.

LD REFERRALS AND THEN WHAT?

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ABSTRACT

The Disabled Students Counseling and Information Office (DSCIO) at the University of Minnesota offers referral information, diagnostic assessment, personal counseling and other services to students with specific learning disabilities. Three counselors certified in specific learning disabilities are employed by DSCIO.

Students at the University may self-refer, they may be referred for possible learning disabilities by family, instructor, a dorm RA or others. Clients are part of a diverse student body of 47,000 spread across 18 schools and colleges which offer more than 160 undergraduate majors and more than 120 graduate majors.

Because of the volume of referrals and the diverse nature of the clients it is necessary to have an efficient, functional system to determine who will need further hours of diagnostic assessment to confirm or disconfirm the presence of a learning disability, and who would be more appropriately served by personal counseling, reading and study skills assistance, or other resources.

As universities and colleges become more accessible to the handicapped, and as children identified as learning disabled under the provision of PL 94-142 (The Education for All Handicapped Children Act) reach college age more referrals to campus assistance centers can be expected for learning disabilities.

When these students reach the learning disabilities professional, that professional needs a convenient, defensible, and practical system to process these clients. This system must also become operational in those cases where the student has no real idea what LD is but a teacher, TA or parent, told him to refer himself to the LD counselor.

This presentation will be divided into three sections. The first will establish a context: discussing definitions, Learning Disabilities services in the state of Minnesota K - 12, the

University of Minnesota in general and the Disabled Student's Counseling and Information Office, henceforth known as DSCIO.

The middle section will discuss LD referral and the consequences arising from that action. Finally, I will make recommendations to improve services to learning disabled students.

The one, proper, correct, and usable definition of learning disabilities has yet to be found. The components and the very existence of such a definition will undoubtedly continue to be debated. For our purposes, we shall use the definition found in the Federal Register of December 29, 1977. It states:

> "Specific learning disability" means a disorder in one or more of the basic psychological processes involved in understanding or in using language, written or spoken, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell or to do mathematical calculations. (121a.5)

According to the "Feds" a team is to be involved in determining if the child has a severe discrepancy in any of the following areas: oral expression, listening comprehension, written expression, basic reading skill, reading comprehension, mathematical calculation or mathematical reasoning. Furthermore, the team must find that the child has been provided with "learning experiences appropriate for the child's age and ability levels" (Fed. Reg. vol. 42 No. 250, Dec. 29, 1977 121a.541).

While colleges and universities are not constrained by these rules, public schools are. Therefore the use of this definition provides a sense of continuity with our compatriots in elementary and high schools who may have already identified our clients as learning disabled. Also it is my strong belief that the notion of the seven specific areas in which a discrepancy can be found and the caveat - when provided with appropriate learning experiences - are of great practical importance.

Often, when a student is referred he has virtually no idea what a learning disability is; someone just thought he might have "it". In instances such as this I use an explanation like that given by Dale Brown (1982:1)

> The term, learning disability, has been used to describe a variety of problems that people have acquiring, storing, and/or retrieving information. Learning disabled people receive inaccurate information through their senses and/or have trouble processing that information. Like static on the radio or a bad TV picture, the information becomes garbled as it travels from the eye, ear, or skin to the brain.

Unless the counselor and the counseled have a common definition to work from, any differential diagnosis will be extremely complicated and unnecessary confusion will result. It is not unusual for the client to return with new questions at every interview. This too speaks to the importance of a common starting point.

In the state of Minnesota we have a special reason for embracing the Federal definition of learning disabilities; Minnesota, unlike most other states has not established its own criteria for LD which would be binding on all local education agencies. The result, of course, is that a student may be learning disabled in district A but not in district B.

> In 1982, the Legislature required the Department of Education to develop and test guidelines, including entrance and exit criteria for districts to use in defining and serving students with learning disabilities....(State of Minnesota, March 26, 1984:8)

These guidelines are not in effect yet.

Because 80% of the students at the University of Minnesota came from the state, what happens in state special education is important. For purposes of comparison with identified LD students served at the University, here are some figures from Minnesota's K-12 population served as handicapped.

In 1983, 4.49% of K-12 students in public and non-public schools were counted as learning disabled. In 1982, 6.0% of all male students were classified as LD but only 2.5% of the females. "In December 1982 Minnesota's special education program served 10.88% of school children... For LD programs Minnesota's rate of 4.97% is also higher than the national average of 4.32%...." (State of Minnesota March 26, 1984:31) Even within the state one can find wide variations: compared to the Twin Cities metropolitan area, the average rate in the other regions is 10% higher overall, 23% higher in LD. Thus we are working in a state with no standard for identifying learning disabled students and with wide variations among districts.

Having outlined the somewhat chaotic state of specific learning disabilities among Minnesota school districts, a thumbnail sketch of the University is in order to establish a contextual framework for the referral services done through DSCIO which will be the next topic.

A land grant institution, the University enrolls more than 55,000 full-time students on its five campuses, has 30,000 employees and is funded by a budget of some 800 million dollars. The Twin Cities campus with about 46,000 students has the highest enrollment of any single campus in the country. Only about 7,000 of these students actually live in University housing, however. Thus, in a sense it is a commuter campus. Undergraduate students can choose from more than 250 majors in 18 different schools and colleges while graduate students have more than 180 programs available (Introductions 1983-1984). These facts and figures place obvious constraints on the services that can be offered.

Models for handicapped students at post-secondary institutions range along a continuum. At one extreme the student is "lone ranger"; no services are given, she must act as her own advocate; fighting, begging, threatening for any assistance at all. At the other extreme is the "University as nanny" model; a highly centralized office provides four years of academic hand-holding, mandating adapted courses, and a whole array of other special services. The University of Minnesota has chosen a highly de-centralized model; services are available but are strictly voluntary, the student bears the major responsibility. Each college office is to designate a coordinator for students with handicaps. Brief quotations from the "University of Minnesota Policies and Procedures on Services for Students with Handicaps" implemented by President Magrath on June 13, 1983 will illustrate the philosophy the LD counselors operate within.

> "The University should organize its support programs for persons with handicaps in a decentralized service system....Persons with handicaps should be served by and in academic departments and other units that are normally responsible for providing these services....voluntary rather than mandatory participation in special programs respects the independence and rights of those qualified persons who wish to pursue educational or employment opportunities at the University.....The focus of efforts to meet the needs of persons with handicaps should be on accommodation of disabilities and not on identification or remediation of disabilities. Academic adjustments should be made on a flexible and individual basis."

Thus, under the policies of the University, LD counselors are to concentrate on accommodation of disabilities and not on remediation or identification. During the 1983-84 school year, there were three part-time LD counselors at the University of Minnesota equivalent to 1 FTE employee. In 1981-1982 the budget was $14,563. As stated previously, the LD counselors are part of DSCIO (Disabled Students Counseling and Information Office). DSCIO is, in turn, a unit within the Student Counseling Bureau. Other units in the Student Counseling Bureau include general counseling, the technical division, the psychometric division and the Reading and Study Skills Center. The Student Counseling Bureau is one of several student development centers which come under the Vice-President for Student Affairs.

The Learning Disabilities counselors are all certified LD teachers meaning that they have had practical teaching and testing experiences; they are educators.

The fact that the LD counselors, the reading and study skills counselors and the personal counselors are all in the same building and are considered part of the same unit reduces turf-guarding and encourages cross-referral.

If students at the University sought assistance in the same percentage as those identified LD K-12 in Minnesota, 4.97%, we would see 2,286 students. The fact is that we see about 74 students a year (some once, some nearly once a week). Percentage-wise, that is about .16%.

Although each of the LD counselors operates in a somewhat different manner, I believe there are seven statements that all would ascribe to:

1. Each learning disabled student manifests a unique set of "symptoms", some are obvious, while others seem to be subtle.

2. Ready made models for treating LD students rarely work.

3. A common issue in counseling LD students concerns self-esteem.

4. The taking of a detailed educational and

family history is an aid in differential diagnosis of the LD student.

5. Often LD persons have family members who exhibit unusually similar symptoms.

6. It is advisable to question the things "everybody knows" about LD.

7. There is little research being done on adults with learning disabilities. Much of what is "known" is extrapolated from studies of children. (Staff Development: 1981)

Clients are first seen at the reception desk where they fill out several forms. Valuable but voluntary information on one form requests age and education level of parents as well as age, sex, educational level of siblings. A checklist is also provided so students can mark areas of greatest concern. Counselors are provided with a complete transcript.

If the client has been identified as LD within the past several years, then discussions about accommodations are most appropriate. The client is also told that there are no remedial courses especially for LD students, but she is encouraged to attend the weekly LD support group as well as occasional short seminars sponsored by DSCIO tailored for LD students on general study skills topics such as writing or spelling.

If the client has not been identified as LD then a common definitional base is established as noted earlier. Next, a questionnaire of about thirty items from the HELD project at Central Washington University is used as a basis of differential diagnosis. Topics such as general coordination, sense of time, directionality, reading spelling, speaking, and mathematical skills are explored. If there are a number of "soft" signs then a diagnostic workup is done to determine if a severe discrepancy exists between achievement and ability in one of the areas noted earlier from the Federal definition.

If no indication of a learning disability is found, then the student may be referred to the

Reading and Study Skills Center at the Student Counseling Bureau or one of the other 23 assistance programs in any of seven colleges.

Having reviewed a definition of learning disabilities, said something of LD services K - 12 in Minnesota, introduced the University of Minnesota, especially its DSCIO services, and described what happens after a referral is made, the presentation will conclude by offering recommendations, in no particular order of importance, which I believe could lead to the improvement of service.

1. The task force on academic skills recommended the establishment of a "paper trail" for clients so that their progress can be monitored and assessed. This must be done within the confines of data privacy. Too often when a referral is made, the counselors have no idea which other academic units the student has been involved with, which special assistance has already been offered, and perhaps refused, etc. Some clients, it seems, have a propensity to drift from one program to another within the University, never benefitting from a coordinated approach.

2. Train instructors of remedial courses in basic teaching techniques for the learning disabled. Since there are no remedial courses especially for the learning disabled students, instructors in these courses need to learn more about the special needs of LD students in their classes. While these instructors may be knowledgeable in Math or Composition or whatever, often it seems they have little training in teaching techniques, especially for the learning disabled.

3. DSCIO should sponsor gatherings for the departmental liaisons several times during the academic year to facilitate interaction between these key faculty members and the counselors of the handicapped.

4. The largest college in terms of enrollment is the College of Liberal Arts (CLA). Quite appropriately, CLA has foreign language requirements for graduation. Yet, there are those few LD students who cannot pass a foreign language.

(CLA offers a choice of some two dozen different languages). In order to be exempt from the requirement, students must prove "invincible incompetence"; procedures need to be put into place so counselors, clients and CLA officials know how to meet the standard of "invincible incompetence".

5. A "normative syllabus" handbook was recommended by the Task Force on Academic Skills (1983:84). Such a handbook would be of great benefit for LD students. The handbook would illustrate the kinds of academic qualifications for incoming freshmen. For example; necessary mathematical processing, the types of library and computer skills needed, the levels of humanity and social science knowledge deemed appropriate, etc.

6. Liaisons need to be developed with the special education department and with other academic units engaged in significant research in areas related to learning disabilities.

7. The sixty-two offices on campus involved with career planning have developed a network to share information among themselves. A similar network should be developed among the twenty units in seven different colleges offering academic skills assistance.

8. Finally, guidelines for procedures for LD counselors to follow after a referral should be written to give continuity and some uniformity to the process.

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INTEGRATING COMPUTER ASSISTED INSTRUCTION INTO A UNIVERSITY LEARNING CENTER PROGRAM

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ABSTRACT

This presentation will focus on three issues related to the integration of computer assisted instruction into a university-level learning assistance center program based on experiences encountered during the past two years at Wayne State University. The issues that will be discussed are: the selection of quality CAI materials, a description of data collected regarding profiles of students who elected the CAI mode of instruction and a review of current literature on CAI.

In the Fall of 1983, the Wayne State University Learning Center was charged with the responsibility of delivering the Developmental Tasks Component of a Job Training Partnership Act Program which was funded through the City of Detroit and managed by the Wayne State College of Education. The purpose of this program was to train participants, selected from the Detroit community, for entry-level, computer-related positions. The College of Education would conduct the content training in the areas of typing, word processing and computer operations, while the Learning Center would render instruction in basic skills subjects, Reading, Math, English and Employability Skills. To supplement group instruction in these areas, and to provide for individual needs, computer-assisted instruction was adopted. It was also anticipated that the CAI would help the participants become familiar with microcomputers and, thus, supplement the training they were receiving in the College of Education.

Using the J.T.P.A. program funds, 15 Apple lle microcomputers and a variety of software in the areas of Reading, Math, English and Employability Skills were purchased. The Apple lle's were selected because of the amount of educational software that was available for use on these machines. During this past year, these materials gradually have been integrated into the Learning Center's general programming for the University students.

The primary purpose of this presentation today is to share some first-hand experiences with CAI that have been gained over the past two years, particularly as these experiences relate to the selection and evaluation of courseware. In addition, some data which was collected from University students who elected the CAI mode of instruction in the Learning Center will be shared and finally, some comments will be made regarding both the current status of CAI in reading programs and the future outlook for this mode of instruction.

Selection of Courseware

Ideally, the process of selecting CAI software would follow the same steps used in choosing other educational materials; based on the curriculum's goals and objectives, the program director and instructional staff would review sample copies, make evaluations, and then if such evaluations were positive, would use them on a limited basis with students; only then would a commitment to purchase be made. It was found, however, that this process could not be used for selecting CAI materials. Most publishers of educational software offer a maximum of 30 days for review. Some do not allow for any review period. These restrictions, they claim, are due to the tremendous problem they encounter with the pirating of programs and the financial losses that are thus incurred. The bureaucratic ordering and returning procedures within the University also interfered with following a traditional selection process even when the publisher did offer a 30 day review period since the movement of paperwork within the system requires more time than the publisher's review restrictions allowed. Therefore, selection of the materials was accomplished through the following means: surveying publishers' catalogs, reviewing literature in the field and consulting with colleagues in other institutions who were involved with CAI programs.

Evaluation of Courseware

In Appendix A, a listing is given of the materials that were selected, an identification of the publisher and an indication of the mode of instruction for which the program was designed, that is, tutorial, drill and practice, and so forth. Then, some brief comments are offered for each software program based on specific criteria that were adopted for the evaluation. These criteria were developed from three data bases: first, Gagne's (1981) elements of instruction, secondly, literature in the field of instructional design as it relates to CAI (Christ (1983), Anderson (1983), Futrell & Gesiert (1985), and, finally, this author's own expertise in instructional design and development. The questions that generated this list were:

1. Does the documentation clearly describe the content of the program, indicate the instructional level and specify the mode of instruction?
2. Are performance objectives clearly stated for the student?
3. Is a pretest given to assess the student's entry level skill?
4. Is a posttest given to assess the student's exit performance?
5. What is the quality of feedback for both

correct and incorrect responses?

6. Is there a help mode? If so, can the student select the amount of help desired and can this mode be exited at will?

7. Does the program include a management system? If so, what type?

8. Can the management system be utilized easily by students and/or instructors?

9. To date, what have been the students' reactions to the program?

While most of the programs listed in the chart have been used as a supplement to instruction in the J.T.P.A. Developmental Tasks program, only the Reading, Vocabulary and Study Skills Programs are being used with the general college students. It also should be noted that this evaluation has been conducted on an informal, experimental basis using input from instructors, students and this author's own observations and therefore, it should be read in this context. Currently, a structured formative evaluation is in progress for the purpose of assessing the CAI component of the Learning Center's program in order that revisions or redirection can be accomplished if so indicated.

Student Profile

In addition to this on-going evaluation effort, data has been collected regarding the profiles of students who elect the CAI mode of instruction for a Speed Reading Program.

In Appendix B, a profile of 50 University students who enrolled in the CAI Speed Reading Program during the Spring/Summer 1985 term is presented. Comparing this population with that of students enrolled in the general program, it is revealed that, at least to date, the CAI course is attracting more graduate students (26% of enrollment versus 14%) and more students from science-related disciplines, (64% versus 40%). Additionally, the grade point average of the CAI students, 3.24, was higher than the average for the students enrolled in the general program, 2.7. The gains in reading speed, however, did not differ significantly from those made by the students enrolled in the traditional speed reading program. It should be noted that this is a preliminary data and a more complete picture should emerge at the end of this academic year.

Review of CAI Research

The research on CAI especially as it relates to its use at the college level learning center reading programs presents a "mixed bag" of findings. The most comprehensive research project on the effectiveness of CAI in colleges and universities was a meta-analysis study undertaken by Kulik Kulik and Cohen in 1979. Their findings showed only modest gains in both student achievement and student attitude toward the course subject matter. This study did reveal, though, a dramatic finding related to instructional time in that the students in CAI courses needed only 2/3 of the instructional time that was required by students in traditional courses. Kester (1982) found positive reading gains for students in a community college basic skills program for black disadvantaged students that utilized the CAI mode of instruction. However, he reported higher attrition rates for the CAI groups compared to the classes that received traditional instruction. Alessi's, Siegel's and Silver's (1982-83) findings likewise showed significant gains in a CAI adult reading program although they cautioned that their study was limited by a small sample size. At Alabama A&M University, Thompson (1980) indicated that significant results were attained in a general reading comprehension program that used CAI as a supplementary activity in the course. Blohm (1982) used the computer in a unique manner for helping students increase reading comprehension. By integrating theory and research in reading and cognition with comprehension and metacognition strategies, he developed advance organizers and a glossing technique to assist students in monitoring their comprehension of their texts.

The computer is also used as a diagnostic prescriptive tool in reading instruction. Mason (1983) is particularly enthusiastic about the ability of the computer to generate diagnostic instruments, analyze results, specify a prescriptive program, and store records of students' progress. A review of the literature reveals only a very few college level reading programs that have adopted computer managed instruction for these purposes. An example of one program that has done so is reported by Havelik (1982) who found significant reading gains in his junior college reading program.

Other researchers, while not reporting effectiveness data, support the use of CAI as a medium of instruction. Schulte & King (1982) feel that although a great deal of research still needs to be done, the computer is a formidable means of communication that should not be ignored by educators. Marsh (1983) supports the advantages CAI offers for individualization of instruction but laments the current unavailability of quality software. Finally, Boylan (1985), through a recent survey he conducted, found that the use of computers in reading programs at the junior college level is indeed increasing with their primary function being to provide supplementary drill and practice.

Status and Outlook

In light of this brief sampling of the literature and based on actual experience with CAI, this author feels that CAI does offer some instructional advantages especially for individualizing instruction, providing supplemental activities and actively involving the learner in the learning process. One immediate disadvantage, however, is the lack of availability of quality courseware especially for use in college level learning centers with the exception of math and writing areas for which quality software is becoming increasingly available. Another disadvantage is the financial cost. Not only must one consider a substantial, initial outlay for both the hardware and the software, but also the need for expensive security systems. Likewise, it has been found that many of the software programs need replacement after a short period of time, expecially those that are popular with the students. Repair of the microcomputer also is a significant financial consideration.

Of primary concern, though, is the lack of substantial research on this very popular method of instruction. As a profession we seem to be jumping on the CAI bandwagon without asking "Why?" Further investigation of theoretical issues is essential for guiding future development and implementation of CAI. As Robleyer (1985) points out what is needed today is "less hype and more hypothesis." Specifically, he lists five major areas: measuring achievement, retention, and transfer, identifying characteristics of materials which enhance achievement, implementation variable (teacher role, individual or group pairing, etc.), field testing and prepurchase evaluations, and studies on trends and social impact. Besides adding research on student characteristics to this list, this author advocates an exchange of ideas between the disciplines of cognitive psychology, artificial intelligence and CAI. Such interaction could lead to a broader development of a philosophy or conceptual framework of CAI, the lack of which seems evident at present.

Therefore, it would seem that while the learning center professional must use a great deal of caution, realism and selectivity when making decisions related to the CAI instructional method, there is a great opportunity for members of our field to take critical leadership roles in initiating scientific studies that could increase the knowledge and theory base of this medium in order to provide guidance and direction for future development.

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Appendix A

CRITERIA FACTORS

MATERIAL AND PUBLISHER	MODE	CLEAR DOCUMENTATION	PERFORMANCE OBJECTIVES	PRETEST	POSTTEST	QUALITY OF FEEDBACK	PROMPTS/ HELP	MANAGEMENT SYSTEM	EASE OF MANAGEMENT SYSTEM USE	STUDENT REACTION
Comprehension Power Milliken	Drill & Practice	Yes	Yes	No	Yes	Encouraging; Incorrect responses - no explanation	Can re-read text	Very good	Yes	Very good
Speed Reading Bureau of Business Practices	Tutorial	Yes	Yes	Yes; WPM and % of comprehension	Yes; WPM and % of comprehension	Distracting "beeps" for incorrect answers	None	No	N/A	Good
SAT Skills Sliwa Enterprises Inc.	Drill & Practice	Yes	Yes	No	No	Good; explanation for incorrect response	After response	Caution: Student can enter teacher mode and modify program	Yes	Fair; some found monotonous
SRA Wordskill Includes workbook SRA	Game	Yes	Yes	No	No	Fair; correct response given only on some games	None	No; score recorded in workbook	N/A	Very good
English Achievement Series Micro-Comp. Courseware	Drill & Practice	Yes	Yes	No	Gives analysis of errors; can be used for diagnostic input	Very good; gives explanation of correct response	None	Yes; can print analysis	Yes	New materia insufficien data
Parts of Speech - Basic Grammar MECC	Drill & Practice	Yes	Yes	No	No	Good; gives definition for incorrect responses	None	No	N/A	Very good

Marie E. Byrnes

Appendix A

CRITERIA FACTORS

MATERIAL AND PUBLISHER	MODE	CLEAR DOCUMENTATION	PERFORMANCE OBJECTIVES	PRETEST	POSTTEST	QUALITY OF FEEDBACK	PROMPTS/ HELP	MANAGEMENT SYSTEM	EASE OF MANAGEMENT SYSTEM USE	STUDENT REACTION
Study Skills Module & Workbooks Effective Study Materials	Tutorial	Yes	Yes	In workbook	Yes, at end of each module	Good; gives rationale	None	No	N/A	Fair
Learning Improvement Series M.C.E.	Tutorial	Yes	Yes	No	No	Fair "Good" or "Try again"	No	No	N/A	Fair
Job Readiness & Assessment M.C.E.	Simulation	Yes	Yes	No	No	Explanation after all responses; wordy	No	No	N/A	Fair
Aquarius Employment Series Academic Software	Simulation	Yes	Yes	No	No	Poor; simplistic	Yes	No	N/A	Poor
Spelling Vol. 2 MECC	Drill & Practice	Yes	Yes	No	No	Good; additional practice given for incorrect responses	None	None	Yes	Good
Eduware Compu-Spell Adult - Secretarial	Drill & Practice	Yes	Yes	No	No	Fair; student must answer correctly to continue	No	Yes	Some difficulty saving score	Very good

Appendix A

CRITERIA FACTORS

MATERIAL AND PUBLISHER	MODE	CLEAR DOCUMENTATION	PERFORMANCE OBJECTIVES	PRETEST	POSTTEST	QUALITY OF FEEDBACK	PROMPTS/ HELP	MANAGEMENT SYSTEM	EASE OF MANAGEMENT SYSTEM USE	STUDENT REACTIO
Eduware Algebra Vol. 1-6	Tutorial	Yes	Yes	Yes	Yes	Gives rationale for correct responses	Yes; easy return to tutorial; can select mode (Discussion, Rule, Sample Problem)	Yes, but student must be trained to use	Easy entry; training needed for exit	Good
SRA Math Level D SRA	Tutorial	Yes	Yes	Yes	Yes	Fair; correct/ incorrect	Gives step by step demonstrations with student interaction	Yes, but tricky	If student doesn't exit properly scores are lost	
Advanced Math Vol. 4 MECC	Drill & Practice	Unclear documentation	Unclear	No	No	Need advanced math skills to understand	No	No	N/A	Little stude use (very ac vanced)
Math Anxiety Reduction H & H Publishers	Tutorial	Yes	Yes	No	No	Fair; seems slow	No	No	N/A	New materia
SRA Math Strategies SRA	Tutorial	Yes	Yes	In workbook	In workbook	Excellent; step by step rationale	Can select amount and type	Record in workbook	N/A	Good
Eduware Elementary Math	Tutorial	Yes	Yes	Yes	Yes	Gives rationale for correct responses	Yes; easy return to tutorial; can select mode	Yes, but student must be trained to use	Easy entry; training needed for exit	Good

Appendix B

University Students Enrolled in CAI Speed Reading Program

Major Area Of Study	Science Related			Social Work	Law	Business	Liberal Arts
	Science	Medicine	Nursing				
	34%	10%	20%	2%	2%	8%	24%
n=50	n=17	n=5	n=10	n=1	n=1	n=4	n=12

Class Status	Freshman	Sophomore	Junior	Senior	Graduate	Post Bacca-laureate
	26%	16%	14%	10%	26%	8%
n=50	n=13	n=8	n=7	n=5	n=13	n=4

Grade point average: 3.24

Average gain in Effective Words Per Minute - 368

(EWPM = words per minute x % of comprehension)

THE SQ3R: A CLASSROOM MODEL

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ABSTRACT

Robinson's SQ3R study method has been the subject of research for some forty years. Research results have varied widely making generalizations regarding the validity of SQ3R difficult. In this discussion the author points out possible reasons for such conflicting research results and describes a classroom model which implements the SQ3R method as Robinson intended, and which resulted in greatly improved learning efficiency for the participants.

The SQ3R method of learning developed by P. F. Robinson in the 1940's is generally considered an excellent system of study. This approach facilitates comprehension and retention through a process of surveying, questioning, reading, reciting and reviewing.

Research has demonstrated that studying and learning from prose is most effective when:

1. Students preview the passages by reading the heading and subheading (Anderson, 1978; Chodos et al., 1977; Rosenshine & Furst, 1971; Schallert, Kleiman & Rubin, 1977).[1]
2. Students recite the subheadings (Brown & Barclay, 1976; Gates, 1917).[2]
3. Students have a focus for their reading through the questions they developed (Anderson, 1970; Chodos et al.; Faw & Waller, 1976; Jenkins & Pany, 1981; Owens, 1976).[3]
4. Students reread subheadings and recited important details (Anderson, 1978; Craik & Lockhart, 1972; Gagne, 1978; Gates, 1971; McConkie, 1978; Smith, 1967).[4]
5. Students rehearsed what they had learned (Brown & Barclay, 1976; Brown & Smiley, 1978).[5]

These procedures are similar to Robinson's method, suggesting that it should be an effective learning procedure.

Research has clearly demonstrated that retention is improved when:

1. Students generate questions about what they read (André & Anderson, 1978-79; Chodos, Gould and Rauch, 1977; Frase & Schwartz, 1975; Schmelzer, 1975; Weiner, 1977).[6]
2. Students generate summary statements about what they read (Chodos et al., 1977; Day, 1980; Doctorow et al., 1978).[7]
3. The reading material is organized around a topic or (the material) has clear topic statements (Aulls, 1975; Bransford & Johnson, 1972; Danner, 1976; Doctorow, Wittrock, & Marker, 1978; Meyer, Brandt, & Bleth, 1980).[8]

Research studies generally have not shown that the SQ3R is any better than underlining or outlining as a method of study (Snyder 247). In her review of the literature, however, Abby Adams (1980) questions the validity of much of this research and concluded that only the research conducted by D. J, Willmore on the SQ3R was valid. Perhaps one explanation for the lack of agreement or support for SQ3R can be found in the fact that in their research design many researchers did not include certain concepts which Robinson maintained were essential elements in teaching the method. He believed that to be effective:

1. The program must be individualized.
2. The program requires much actual sustained practice over a fairly long time.
3. The method must be closely allied with the new materials that the students are learning.
4. Through the program, the students must see the value of their efforts and must receive positive rewards (viii & ix).[9]

The method described below makes provision for all of Robinson's requirements and has been effectively used in a required, three credit hour, graded, study skills course for conditionally admitted college freshmen. The class was limited to 20 students and met twice a week.

During the first four weeks of the course, students working in small groups discussed campus know-how, time management, memory and concentration and questioning strategies. In the fifth week they were introduced to a modified form of the Cornell notetaking method. They were required to use this method of notetaking in all their courses and to bring their class notes to the study skills class once a week. In the sixth week the students brought in texts from their other courses and, after a demonstration of the SQ3R method, the students practiced this method in class using one of their texts. The students wrote the questions, answers and summaries in their texts. For the remainder of the semester they applied this method to their texts and brought these and their text notes and lecture notes to class for evaluation. Their grades for these two activities were recorded on a sheet such as the enclosed sample.

STUDENT WORK RECORD

	WK	1	WK	2	WK	3	WK	4
NAME	T	N	T	N	T	N	T	N
COURSE								

During the ten weeks which followed, the students, still working in small groups, participated in discussions of critical thinking, speed reading and test taking strategies.

This method of presenting of the SQ3R method met all the criteria Robinson advocated.

1. It allowed the instructor to individualize the instruction.
2. It allowed supervision of the students' practice with SQ3R by the instructor's weekly review and evaluation of their work.
3. It insured transfer of the technique to textbooks. Because their work was reviewed, graded and recorded weekly in their presence, it provided sustained motivation and immediate feedback to the students.
4. It provided the students with immediate positive results for their efforts. They more quickly comprehended the materials in their academic courses and their grades on class quizzes and exams improved as these courses progressed.

When utilizing this method, several managerial and pedagogial factors must be kept in mind. Students need to list all of their other courses on a card at the outset of the study skills course. When the students are seated alphabetically in class it is easier and faster to evaluate their texts and notes. Because it takes about 30 minutes of class time to evaluate the notes and texts of ten students, the instructor needs to provide materials for independent study during this time.

Many students find it difficult to write in their textbook because they were not allowed to do this in high school. Some want to resell their texts at the end of the semester. In some textbooks the narrow margins make writing difficult, and in a few texts, especially business ones, the questions and answers are already highlighted by the publisher. Some students want to underline instead of writing. Students with math, music, literature or workbooks don't write as copious notes as students with other kinds of texts.

Experience has shown that students soon overcome their hesitancy to write in their texts when they see the benefits it affords. Students who want to resell their text can be allowed to write their questions and answers on notepaper. Even when questions and answers are already written in the text by the publishers, the students benefit from writing the main points in their own words. Underlining doesn't provide the students with the opportunity to explain what they have learned. Only by writing can students really check their comprehension. Even in math, music, or workbooks the students should learn to explain the concepts, principles and formulae in their own words. With literature, students learn to summarize the chapters and predict outcomes.

Besides the positive benefits of the SQ3R to the students, there are a number of benefits to the instructor and the institution. The method works well in a classroom situation regardless of the variety of academic courses students take. The instructor can still meet the individual needs of students in a classroom setting. As the instructor evaluates the students' notes, he/she can refer students with writing difficulties to the writing lab. The instructor becomes a coach or an advocate of the students' learning one of the points Keimig stresses in her book, Raising Academic Standards: A Guide to Learning Improvement.

Colleges benefit because it is more efficient for an instructor to work with a group of students than individually. Retention of these marginal students is improved. For the last semester that this method was used at a private liberal arts midwestern college, not one of the students who participated in the course failed any academic course that they took. All returned next semester.

From this program, it would seem that Robinson's SQ3R method needs to be reevaluated using research designs which examine both the steps of the method and the criteria for its implementation recommended by Robinson.

Kay Fisher

FOOTNOTES

1. As cited in Adams, Carnine & Garten (1982-1983) p. 32
2. Adams, p. 24
3. Adams, p. 24
4. Adams, p. 24
5. Adams, p. 24
6. Adams, pp. 33 & 34
7. Adams, pp. 33 & 34
8. Adams, pp. 33 & 34
9. Robinson, Francis P., EFFECTIVE STUDY, Revised Edition. New York. Harper Brothers, Publishers, 1961

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FRESHMAN YEAR OF STUDIES
UNIVERSITY OF NOTRE DAME

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ABSTRACT

All of Notre Dames' approximately 1800 freshmen spend their first year in the Freshman Year of Studies (FYS), and move to the college of their choice as sophomores. The FYS grew out of a focus on the development of two elements:

1) An appropriate freshman curriculum which would serve the purposes of the University and provide a strong general education for students, while giving them an opportunity to explore areas before making a commitment to either a college or a major.
2) The development of support systems appropriate to freshman student needs. The program is characterized by a strong communication system between the FYS staff, the student, their parents, the faculty, and the residence hall supervisors. It encompasses a special orientation program for parents, an agressive counseling program, a dean's newsletter, and regular staff contacts to monitor individual students' progress.

The University of Notre Dame is a coeducational Catholic institution. All Notre Dame freshmen (approximately 1,800 students) spend their first year in the Freshman Year of Studies (FYS), then move into the college of their choice as sophomores. Ninety-five percent of these students rank in the top 20% of their high school graduating class and, for 87%, Notre Dame was the first choice of college. Over 80% of undergraduates live on campus and all non-local freshmen are required to do so.

Notre Dame did not consciously undertake a campus-wide retention effort. The FYS grew out of a focus on the development of two elements: (1) an appropriate Freshman Curriculum which would serve the purposes of the University and which would provide for strong general education and give freshmen the opportunity to sample an area before making a commitment to a specific college or major, and (2) support systems appropriate to the needs of freshmen. The development and implementation of such a curriculum and of suitable support systems produced as a by-product a freshman attrition rate which has been at only about one percent for the last ten years, with only about one-half of one percent attributable to academic failure.

The dean is responsible for the overall policies of the FYS, implementing programs directly, especially the Freshman Curriculum, and exercising final decision regarding individual student matters. The associate dean is charged with implementing all policies in the FYS. The assistant dean is responsible for the special needs of minority and handicapped students and serves as liaison with the Office of Student Affairs. Seven advisors, the director of the Learning Resource Center, and thirty senior interviewers complete the FYS staff.

Basically, there are four functions involved in the Freshman Year of Studies: (1) The Freshman Curriculum was designed by the University Committee for the FYS and approved by the Academic Council, the academic governing board on campus. Details of the program are examined annually. (2) Each freshman is assigned to a guidance team which includes an advisor-director and several undergraduate senior interviewers. The counseling focus is on personal adjustment, academic survival and educational/career planning. (3) The Learning Resource Center offers freshmen extensive tutoring and special programs at no cost. The Center houses an educational/career information library and provides a testing program for educational/career exploration. The advisors work very closely with the Center director to insure that the freshmen receive the assistance required. (4) Special projects such as picnics at the Dunes, snow parties, trips to Chicago, freshman date nights, dances, and the Talent Festival enable freshmen to adjust socially to the University and to one another and to learn to enjoy and like the campus.

The structure of the FYS might not be radically different from what may be found at some other universities, but the approach and spirit accompanying this structure is probably unique. The program is characterized by a strong communication system between the FYS staff and the freshmen, their parents, the faculty, and the residence hall supervisors. This system includes a special orientation program for parents, an aggressive counseling program, dean's newsletters for freshmen, and another for parents of freshmen, regular contact by the FYS staff with faculty concerning the progress of individual freshman—a mechanism especially effective in the required Freshman Writing Program courses where enrollment is limited to 16 per section—and regular contact between FYS and residence hall staffs.

It is not uncommon for a FYS advisor to take a freshman to lunch (The dean takes a different freshman to lunch virtually every day during the academic year!). This communication system appears to be effective since, in general, freshmen become aware that the FYS staff is genuinely concerned with their progress. They recognize that the University wants their success and happiness and will do everything possible to help them achieve their goals. Freshmen sense that faculty, administrators, and upperclassmen truly like them as individuals. They learn to develop a sense of community characterized by mutual respect and caring among students, faculty, and administrators.

As significant as this emphasis on communication is to the organizing effort, the core of the FYS is the Freshman Curriculum. All freshmen take the same course format, but not necessarily the same courses. The Freshman Curriculum includes required courses in writing and literature, mathematics, natural science or foreign language, and history or social science and three elective courses. The nature and level of the mathematics, natural science, and language courses depends upon the student's background and interests.

Several of the courses in the Freshman Curriculum provide a good beginning in specialized education for programs with a strong structural sequence and/or a well defined career orientation. Thus, if the freshman is interested in such a program, he or she will be able to take certain courses in the freshman year to affirm that interest and to start specialized study towards that program or career orientation.

On the other hand, for students who might not yet have a strong commitment to a particular program, the freshman year should be a time for exploration and discovery—a time for seeking goals. General education might be the springboard to a program of specialized study. Experience in a broad range of areas enables the student to compare alternatives before choosing the goal he or she wishes to pursue.

In 1971, Notre Dame strengthened its strong stand on general education by formalizing the Freshman Curriculus and the general education program. In addition to the requirements of the Freshman Curriculum, all undergraduates must take courses in philosophy and theology and other general education courses specified by each college.

There is evidence that the Freshman Year of Studies is "on the right track." The very low attrition rate in the FYS (about one percent) establishes a pattern for the remaining three undergraduate years. The attrition from freshmen through senior year is under eight percent. The fact that some of the undergraduates not enrolled in the eighth semester do return later to complete their degrees brings the final attrition rate closer to six or seven percent.

The individual attention given freshmen makes it virtually impossible for them to simply leave the University. An elaborate withdrawal procedure requires an exit interview with the dean. Information about the student from faculty, residence hall staffs, and the Office of Student Affairs is channeled to the dean of the FYS. Frequently, through this procedure and particularly during the exit interview, the problem the freshman is experiencing is resolved and there is no withdrawal.

The FYS is responsive to the uncertainty characteristic of so many entering freshmen. During the past 12 years about sixty percent of the freshmen changed their intended program at least once during the freshman year. The structure of the Freshman Curriculum, the aggressive and effective counseling program, and the assistance offered through the Learning Resource Center have converged to create a climate in which substantial numbers of freshmen are able to resolve uncertainty and to advance confidently to the sophomore year.

THE FRESHMAN READING COURSE AT BALL STATE UNIVERSITY

Dr. M. Harshbarger
Ball State University

Several years ago (1971) Ball State University initiated the policy of placing high-risk freshman students in an "Academic Opportunity Program." The goal of the Academic Opportunity Program (AOP) was to: (1) identify high-risk students who appeared to have the potential of completing university programs successfully; (2) to identify gaps in basic education, and (3) to provide the assistance necessary for these students to "fill in" these educational gaps.

Students were placed in the Academic Opportunity Program when their records indicated both low SAT scores and poor high-school grades. From 1971 until 1982, a reading improvement course (EDRDG 105) was taken by most of the AOP students. An effort was made to channel the students with the lowest scores into the class during the Autumn Quarter. This one-quarter course (4 credit hours) met five days a week and included a library experience, practice on spelling "demons", vocabulary exercises, work on study skills (note-taking, SQ3R, time-management), as well as systematic instruction in such reading skills as identification of main ideas and drawing conclusions. On the basis of test scores an individual folder for each student was set up. In each folder certain "core" materials were placed. In addition, the instructor assigned reading selections and practice exercises at the student's instructional level. The student "contracted" to complete the work in this folder in one week (four class sessions). On the fifth day, an individual conference between instructor and student took place. During this conference, the completed work was evaluated and plans were made for the following week. At this time the instructor was able to give suggestions for handling other difficulties, both personal and academic, the student was facing. This weekly conference was viewed by most students as one of the real strengths of the course.

This basic plan with periodic changes of materials and emphasis was followed until 1983. No text was utilized because the entering levels and needs of students varied widely. Students were placed at their instructional level and encouraged to move on to more challenging materials as soon as possible. Statistical analysis of pre- and posttest scores consistently indicated growth in reading skills as measured by scores on a standardized reading test. Statistics from the Admissions Office suggested that AOP students were being retained at a rate (62%) almost comparable to the national average of retention for college students. This is not to suggest that EDRDG 105 alone was responsible for this achievement, but it does appear that EDRDG 105 was an important contributor to success during the freshman year for AOP students during the years 1971-1982.

A change in AOP directors, and thus in philosophy, has resulted in some changes in the reading improvement course presently being offered the Ball State students in the Academic Opportunity Program. The course has now become EDRDG 099, and is labeled a remedial credit/no credit course which carries no credit toward graduation. Students must reach the 34th percentile in comprehension on the posttest in order to receive "credit" for the course. For the first time, a text is required. Book F: Essay Structure (part of The Reading-Program, Leo A. Meyer Associates, Inc.) was selected because it emphasizes the identification of thesis statements and the outlining of essays or chapters. A system of checkpoints allows the student to evaluate his progress as he moves through the text. The course still incorporates a library component and considerable attention to study skills. The weekly instructor-student conference has been maintained.

Evaluation of posttest results continues to indicate that students improve in reading skills. (Posttest reading scores continue to indicate improvement at the .001 level of confidence). Students still report that the class helps them in content areas. However, informal measures (negative student comments, poorer attendance, and increased failure to complete the course) suggest that it has become more difficult to motivate students now that the course is "credit/no credit." More accurate assessment of this change will be made after the present format has been in force for several years.

AN OVERVIEW OF BALL STATE UNIVERSITY'S READING PROGRAMS

Dr. Dorothy Shipman
Ball State University

At present, Ball State offers its students a choice of three reading programs. These programs have been designed to meet the varying needs of students attending the University. The three programs are:

A. Self-Improvement (High Risk Students)
B. Critical Reading (Any student)
C. Clinic Services

A. The Self Improvement course (EDRDG 099) serves approximately 300 students per year. In the past, it has served as many as 800 students in an academic year. As the companion paper will explain in greater detail, this course can be described in the following terms:

1. SAT scores
   The entering verbal SAT scores of the students taking this course suggest that these students will have difficulty reading college level textbooks.
2. Pre-Posttesting
   Systematic pre and posttesting enables both the individual student and the instructor to evaluate student progress.
3. Modified Contracts
   This format was adopted in order to give the student weekly feedback about his progress.
4. Course Completion
   If the student does not read the 34th percentile in comprehension on the posttest (The Diagnostic Reading Test), he is urged to repeat the course—or at least continue in the course until he achieves the level previously stated.

B. Ball State also offers EDRDG 108 or Critical Reading. This four credit course is open to any college student. This course emphasizes:

1. Reading college level texts.
   Students are urged to bring their own texts and are helped to find a method of reading, note-taking and synthesizing that works for them.
2. Critical reading skills.
   Students are given opportunities to select support for conclusions and hypotheses, to synthesize information from several sources, to determine the relevancy of information, to detect errors in reasoning, and to understand relationships and analogies.
3. Rate improvement.
   Students are given opportunities to develop flexibility of reading rate as well as practice with the skills of skimming and scanning.

C. The Reading Clinic offers two levels of diagnosis to Ball State students.
   1. Complete Diagnostic Program.
      When the student requesting diagnostic information is willing and able to schedule a complete five to six hour diagnosis, a faculty member or doctoral fellow attempts to provide this service as quickly as possible. The diagnosis is followed by a conference with the student. During this conference, areas of weakness and strength are discussed, and a program for assisting the student is developed.
   2. Semi-diagnostic Program.
      When the student's problems do not appear too severe, or when time is a factor, a standardized reading test is administered to the individual. An item analysis has been developed which helps the faculty determine problems with main idea, recall of facts, etc. A conference with the student is held and attention is called to the type of errors most frequently made. A program to help the student overcome these specific problems is developed.

The Ball State Reading Clinic also serves the community. Diagnosis and follow-up tutoring is available on a limited basis to students from area schools.